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How to Standardize the Chinese Dollar

Unification of Existing Coinage More Important Now Than Adaptation to Foreign Standards

[BY G. PASSERI, ADVISER TO THE BANK OF CHINA]

In all discussions of the national currency system of China, which have as an object the reform of this system, much time has been spent in speculating upon the adoption of some foreign standard. The need of reform is so apparent that a wide field has been afforded to theorists and the fascination of theory has carried most of those who have reason to consider currency reform far beyond the needs of the immediate present and has led them to advocate with more or less vigor the adoption of some foreign standard, so that we have had almost a surfeit of learned treatises upon the respective merits of the "gold standard," the "gold exchange standard," the "silver standard," the "bi-metallic standard," and upon other systems less orthodox.

In all this discussion, interesting and valuable as it is, the theorists have lost sight of the fact that there is an immediate problem in the unification of existing currency which must be solved before the numerous systems, which are much more important theoretically but practically unattainable under present conditions, are even considered. It seems quite impossible now that so many parts of China have nearly independent monetary systems and local peculiarities of exchange, depending in many cases upon nothing more than local taste and prejudice, to consider adapting the Chinese currency system to any foreign standard. The first task in reform must be the adoption of coinage standards within China itself so that the numerous kinds of money now circulating will at least exchange at a fixed ratio with the selected standard.

The kinds of currency in China are now so numerous and the various coins and notes have such uncertain values, varying in their relative value from day to day, that the adoption of a gold standard for instance would be like slipping a handsome evening gown on over the soiled and shapeless garments of a household drudge. The old clothes must be carefully renovated or changed before China can appropriately put on the more pretentious outer garments, which, by the way, can be procured "ready to wear" from almost any quarter when the time comes. There is no doubt that the substitution of a gold standard for the silver standard, if it could be introduced now, would improve the external interests of this country and its financial relations with others. All the problems of foreign trade and the consequent "balance" of foreign debts and the stability of their payments, would solve themselves automatically. But if a gold standard were adopted now without preparation the problems of internal trade relations and the problems arising out of the

thousand and one antiquated and cumbersome systems of monetary relations in China, would be thrown into unspeakable chaos. The old mediums of exchange with their tenacious accompaniment of prejudices, could not be abolished in a day; the introduction of a gold standard would have no effect for instance upon the old system of transfer taels and its accompaniment of evils, and would, as long as the internal system remained unadjusted, simply give the ingenious Chinese exchange profiteer another gambling element to introduce into his transactions.

It is easy enough to study foreign currency systems and to introduce them bodily when the time comes, but the preliminary internal reform must grow out of Chinese initiative and the first step must be that of bringing the different mediums of exchange in vogue throughout the country up to a uniform expression. In this work theory is of little value; outsiders can give little real help; the duty of preparing the Chinese soil for the transplanting of a foreign currency system and standard devolves entirely upon the Chinese.

First Steps in Reform

In working out a campaign of currency reform in China, the system which opposes the fewest established institutions and rubs the fewest traditions the wrong way is the most likely to succeed. For this reason, in the beginning, the easiest way is probably the best way.

The first measures which one would naturally undertake would be two—the adoption of a uniform standard, and the establishment of a constant (possibly decimal) relation between the token coins (small coins) and the standard. The writer at one time advocated as a primary measure the adoption of a new dollar of smaller value than any existing, but based upon a decimal progression from the average value of the small coins so widely circulated but bearing such erratic relations to all existing dollars. The objections to the arbitrary adoption of an entirely new standard were founded upon such sound principles of expediency that the idea of creating a new standard coin which would be an even decimal multiple of the average value of the small coinage, had to be abandoned.

An easier scheme had to be worked out and a scheme involving no great expense. Any such scheme presupposes the existence of a Government Bank, enjoying a certain amount of credit and possessing an efficient organization. This does not

mean that such a bank's credit should be faultless and its organization perfect, because it will probably be some time before such an institution exists in China; but some degree of improvement in both the Government's financial administration and in the existing banks is essential to success in a currency reform program and there is no reason to believe that the required improvement is unattainable.

Taking an efficient Government Bank for granted then, the first dollar among the many to suggest itself as a standard is the "Peiyang" dollar (uniform of course both in appearance and finesse). The arguments for its adoption, which fall in line with the principle that for China the easiest way is the best way, are that a greater number have been minted than of any other dollar, and that it circulates over a wider area already than any other. It was said some time ago that there were two hundred million in circulation in China and there is good reason to believe that the circulation has recently increased.

After the adoption of a standard the next step would be to insure its constant value and to guard it against the fluctuations in value which in China have so little to do with intrinsic worth and so much to do with taste, unaccountable preferences, and manipulation of exchange. It is hard to explain to one who has never done business in China why one community will value a certain kind of dollar much more than any other even though its weight and quality are below the standards in use in neighboring communities. Why the Spanish or Carolus dollar circulates in a few places only, such as Wuhu, Ningpo, and Hangchow, and in those places passes at a premium of from thirty to forty per cent above the Mexican dollar, although of less intrinsic value, can only be explained by custom and prejudice. In the same fashion the Hongkong and Straits dollars are shown a decided preference in certain cotton growing districts.

If the Peiyang dollar were chosen as the standard and if it were to have a constant value, it would of course be necessary for the Government to legalize it as a standard and to stipulate its value by law. This might be little more than a formality, for popular valuations upon mediums of exchange are not much moved by legislation, and the burden of the work of coaxing the Chinese people into a recognition of the legal standard and value would fall upon the Bank of China. This work the bank can do by the judicious distribution of the standard, by insisting in all exchange upon the maintenance of the constant value and by exercising every influence to render it popular in districts in which other dollars are the fashion. This may not sound like an easy program, but it has been carried out in one conspicuous instance by the manager of the Shanghai branch of the Bank of China, who was very successful in getting out of the market a variety of dollars and in standardizing what is there known as the "Chinese Dollar," which is no other than the Peiyang dollar. In Shanghai custom and prejudice are just as tenacious as elsewhere and the market is a very large one, so the achievement is good evidence of what can be done.

All show of coercion or imposition must of course be avoided in financial matters, for where a currency system is forced upon the people, it is unpopular because a few with money to invest are certain to take advantage of the abnormal conditions arising out of a radical alteration in values and profit very largely at the expense of the masses. The standard should be indicated, not enforced, and then it should be the business of the banks to persuade the people themselves to conform to the standard. Such gradual conformity could be brought about almost without the knowledge of the people. To accomplish such work the Government and the Bank of China should of course be normally efficient. By normal is meant normal for China, a condition reached just before the crisis of 1916. The Bank of China was then efficient in the discharge of its duties and obligations and had an issue of notes reaching \$50 million at one time, which is remarkable considering the small volume of business other than Government transactions. If the Bank of China were not only a fiscal instrument, but also an institution taking an active part in the financing of the commercial and industrial undertakings of this country, there is good reason to believe that the note issue could be increased tenfold. Now, for the definite steps in a hypothetical scheme of reform after the Government's and the Bank's

financial efficiency had been assured—they should be divided into three distinct phases.

The First Phase of the Scheme

The Bank of China should issue bank notes, as it has done with some success in the past, bearing the name of the place or province of issue. It should be the Bank's first duty to try to level up the differences now existing in the quotations of the various dollars and to pay them in the adopted standard—the Peiyang dollar, if it were adopted. Such a leveling up of quotations might at first seem an expensive undertaking, but it has been achieved in at least one instance in the past by the Bank of China. If all the branches of the Bank were to work together to this end in absolute good faith and abandon the old policy of "squeezing" each other on rates, thereby causing unjustified losses, the leveling up of quotations and the gradual introduction of the standard would cost little or nothing.

It would be a distinct advantage in a note issue to have the names of the places or provinces of issue printed on the notes. The Bank would be under legal obligations to cash them at the place of issue only, and while for the working of the scheme of reform it would be advisable to cash all notes at par wherever presented, the Bank could legally reserve the right to pay at the point of issue only. It is probable that at the beginning, until the Bank had learned by experience where there would be the heaviest demands for silver, according to the season, crops, conditions of trade, *et cetera*, the distribution of silver reserve would not be wholly judicious, and the right of restricting payment to the place of issue would be a convenient precaution in case of an abnormal demand. In the ordinary course of business under normal conditions, the cashing of the notes at par at all banks would be regarded by the public as a favor and a convenience and would tend to make the note issue popular.

In the cashing of bank notes the Bank of China would of course use the standard dollar throughout the country, and to provide for this no special fund should be needed, as a sufficient silver reserve would be provided at the time of the issue of the notes; for if notes were put out it would only be against silver, or against credit of such a nature that it could be converted into silver.

Much of the silver that would come into the branches against notes would not be of the standard, and it would be the bank's duty to remint all such silver at once and to pay out no silver that was not standard. This process of issuing notes payable in a standard dollar, of putting the standard into wide circulation through the redemption of the notes in the ordinary course of business, and of accepting and reminting all coinage other than the standard, should be continued until notes to the value of \$75 million had been put into circulation, which under normal conditions should not require much more than one year. The Bank of China would then be prepared to enter upon the second phase in the scheme of reform.

The Second Phase

When the circulation of notes of small denominations (they should not be higher than \$10 during the first phase of the reform scheme) had reached approximately \$75 million, it would be time for the Bank of China to announce to the public the withdrawal of all notes bearing the name of the place of issue against new notes, also payable in the standard dollar and circulating at par throughout the country. In this issue notes of \$50 and \$100, not higher, could be introduced. As a measure of safety in this issue it would be well to have the notes redeemable at only three places besides Peking; namely, Tientsin, Shanghai, and Canton. No other branch of the Bank of China should be legally liable to cash notes, although it would be good business for all other branches to cash them as a favor to the public whenever they were in a position to do so. By this arrangement China would be divided into three districts, northern, central, and southern, and only one branch in each of these districts would be under legal obligations to cash notes, besides the head office in Peking. This arrangement should be satisfactory and give sufficient accommodation to the public and it

would permit the Bank of China to distribute its reserves satisfactorily. At the same time the restriction of the issue to denominations of \$100 or less, coupled with the fact that redemption of the notes would be limited to three branches of the bank, would effectually check speculation.

These measures, designed to popularize the notes, ought to bring the value of the total note issue up to \$100 million in a very short time, and since these notes of the Bank of China would be the only ones based upon the constant standard in China, the public would undoubtedly prefer them to the notes issued by any other institution. Having accomplished this much, the Bank of China should have a silver reserve equivalent to at least 80 per cent of the total value of the note flotation, and if all silver received against notes were consistently reminted the stock of standard dollars in reserve should be large.

The Third Phase

The one object of issuing great numbers of notes, of reminting dollars, and of doing away with the provincial limitation upon the circulation of notes, would be to convince the people of the value of a standard coin and of the value of notes of fixed value based upon that standard. It would be a campaign of persuasion, much more likely to succeed in China than a campaign of coercion, especially in financial matters. The sole end of the processes which have been outlined would be to educate the Chinese people, who are extremely reasonable and intelligent in such matters, up to an appreciation of mediums of exchange of constant value. The third step in reform would come whenever it was felt that this had been attained, and this third step would be the establishment of a constant ratio between the chosen standard dollar and all other forms of coinage or mediums of exchange in use in China.

Possessing a standard dollar, something of constant value, together with its substitute, the bank notes, a table of equivalents should be compiled showing the value of all other kinds of money in their relation to the standard. The ratio in the case of each kind of coinage should be established according to the silver equivalent of each coin, taking into consideration of course fineness, touch, scale, *et cetera*, less a very small proportion of the minting charges of the standard dollar. This table of equivalents should be given the widest possible publicity by the Ministry of Finance, mentioning that the Bank of China was prepared in all its branches to receive in exchange for standard dollars at the fixed ratio all coins, shoes, bars, and the like, circulating as mediums of exchange. The bank should be under no obligations of course to pay out other coinage than the standard in exchange for standard dollars, though it would continue to cash its notes at the four branches stipulated.

There should be no attempt, even at this stage of the reform, to force the standard upon the people, for any such attempt would undoubtedly make the Chinese public suspicious of the whole scheme. They should be left to realize the advantage of

a standard of constant value and of constant exchange in all other coinages and mediums, and to take their own time about bringing forward whatever other dollars or mediums they possessed to exchange for standard dollars or standard notes. When the public had shown some such tendency it would be time to issue notes of larger denominations, rising gradually to \$500, to take the place of mediums of exchange now used in big transactions. Chinese merchants would soon prefer to carry notes with them on a journey, as it would not take long for one to appreciate the advantage of carrying one hundred \$500 notes instead of about 11 cases of sycee, especially when the notes would be negotiable anywhere for actual hard silver of standard value.

Subsidiary Coins

The standardization of Chinese currency would have to begin with the creation and establishment of a standard dollar, but it would not end there. The subsidiary coins, which do not bear a decimal relation to any existing dollar and which do not even have a fixed relation among themselves, would have to be brought into a constant ratio with the standard dollar. When one considers how many different kinds and values of small coins are in circulation, the solution which at once suggests itself would be the minting of a new set of coins in decimal relation to the standard dollar. This would certainly be the most complete and satisfactory solution but it would be a hopelessly big and expensive task for either the Government or the Bank of China if it were hoped to effect a general reform throughout the Republic of China. The introduction of standard coins to succeed the small coins now in circulation would imply the withdrawal of all the old coins, as the new coins would depreciate if of inferior quality to the old coins or would not stay on the market if of better quality. The minting charge alone for re-coining an estimated number of 500,000,000,000 small coins now in circulation in China would be enormous.

The easiest and cheapest way to standardize the value of small coins would be for the Bank of China, say in the second



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phase of the standardization of the dollar, to advertise its readiness to exchange small coins against the standard both ways. The following values would probably strike an average between the values of the various coins of nominal value of 1 cash, 1 copper, 10 cents, and 20 cents: 1,250 cash to the standard dollar, 120 coppers, 10 ten cent pieces and 19 coppers, and 5 twenty cent pieces and 19 coppers. This would be an expensive arrangement for the Government, but a certain proportion of the coins, which would undoubtedly flood the bank at first, could be purchased with the new notes, and as the number on the market was reduced, the rate could gradually be lowered and the coins distributed judiciously over the country, so that in a few years the value of these coins could be made constant and probably decimal to the standard.

Provincial Bank Notes

The last problem which the Government and the Bank of China would be called upon to consider in standardizing the currency would be the withdrawal of the provincial bank notes, and this should not be undertaken until the standardization of the dollar had passed through the three phases which have been outlined. The total withdrawal of these notes should be left until the bank had a sufficiently large note issue to warrant substituting for them at least 70 per cent Bank of China notes and 30 per cent silver. The market value of the provincial notes now in circulation is estimated at more than \$100 million, so that the withdrawal of all these notes *en bloc* would cost \$30 million in silver.

The leveling up of rates and the introduction of the standard dollar, which would include one third of the minting charges on reminted coins, the establishment of a central mint, and transportation charges, would probably come to \$10 million. The improvement of small coin values might cost another \$10 million, and the withdrawal of provincial bank notes, as estimated above, would cost \$30 million. The total cost then for carrying out a scheme of internal currency reform would be about \$50 million. To cover this no part of the silver reserve of the Bank of China could be made available, as this would be drawn upon

to the extent of \$70 million in the withdrawal of the provincial notes. It would probably be necessary therefore to arrange for a loan in the last phase of the standardization of the dollar.

One step that would be most essential to the success of this scheme would be the closing of all provincial mints and the establishment of a central mint under the absolute and direct control of the Ministry of Finance. The mint should offer to accept silver in any form, except bars, for reminting, and should charge a fixed rate based upon the extra amount charged in the table of equivalents as proportion of minting charges, say one third. This would mean that the Chinese people could have standard dollars minted at one third of the actual cost. The charge could of course be increased to the actual cost whenever the amount of standard dollars in circulation was deemed sufficient for the needs of the country. The mint should not in any event be allowed to make a profit.

With regard to the right of issuing notes, the Bank of China should be the only institution permitted to issue notes, and a law should be passed during the second phase in the development of the standardization scheme prohibiting the issue of notes by any other institution. The Bank should be given the right to issue up to say \$300 million free of taxation, above which figure issues could be taxed according to a progressive scale.

The Railway Administration of China

Trying to fit square pegs into round holes is at best a profitless occupation. Yet this has been the kind of pastime in which Chinese administrators have been prone to indulge when they selected friends for positions for which they were utterly unsuited. While this reproach may to some extent be still deserved, there are indications that the conditions which provoke it are being changed. The beginnings of reform are already noticeable, particularly in railway administration. Tsao Ju-lin, the Minister of Communications, is not without his critics. Indeed, who is? But whatever his limitations may be, it must be conceded that he could hardly have made a better selection of men to administer the several railways of this country than he has done, and credit must be given to him for placing efficiency before nepotism. To prove this it is only necessary to make mention of the names of the men to whom railway management has been intrusted.

Yeh Kung-cho, the Vice Minister, has practically a lifelong experience in railway work. Starting his career as senior clerk in the Railway Administration of the Ching Dynasty, he worked his way upwards by sheer ability. Such was the confidence reposed in him by his superiors in office that they intrusted to him the drafting of nearly all the railway agreements which have been entered into during the past decade, and, although he has not had the benefit of a foreign education, he has acquired an experience which is extremely valuable to his country. He certainly knows how to utilize men to the best advantage, and his selection or endorsement of the many Western-trained men for the practical work of railway administration must commend itself to fair-minded critics. Mr. Kwan Kang-lin, the present Director of the Railway Department, was for many years the Managing Director of the Peking-Hankow Line and was a close associate of the Vice Minister during the Ching Dynasty in the Imperial Railway Administration. He has acquired a technical knowledge and a rich experience which are of considerable value.

Take the Peking-Hankow Line. At its head is Dr. C. C. Wang, a man who undoubtedly has the confidence of foreigners. He graduated as a civil engineer and obtained his doctor's degree

in railway administration. There is no need to draw attention to his qualifications. They are universally recognized. Associated with him in the directorship is Mr. Shui Chun-shao, also a foreign-educated student, who studied engineering in France, and who has been connected with the railway for many years.

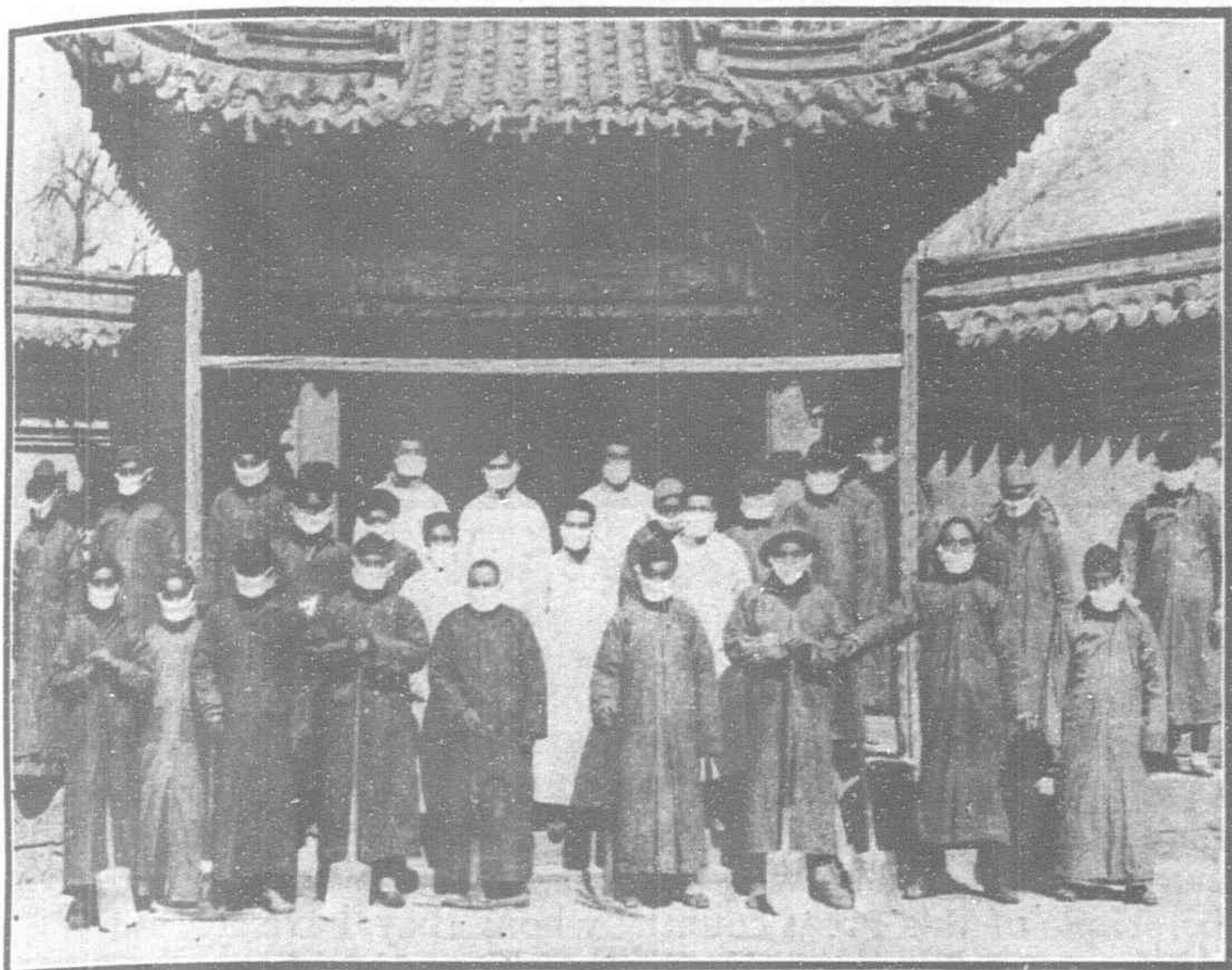
In charge of the Peking-Mukden Line is Mr. Shu Ting-cho, another product of American universities, who has been associate managing director for five years. His ability is unquestioned.

On the Tientsin-Pukow Railway there is at the head of affairs, Mr. Hsu Shih-chang, a brother of the ex-premier. After completing his engineering studies in France, he was made managing director of the Lunghai Railway, and has proved himself a man well qualified for the higher appointments.

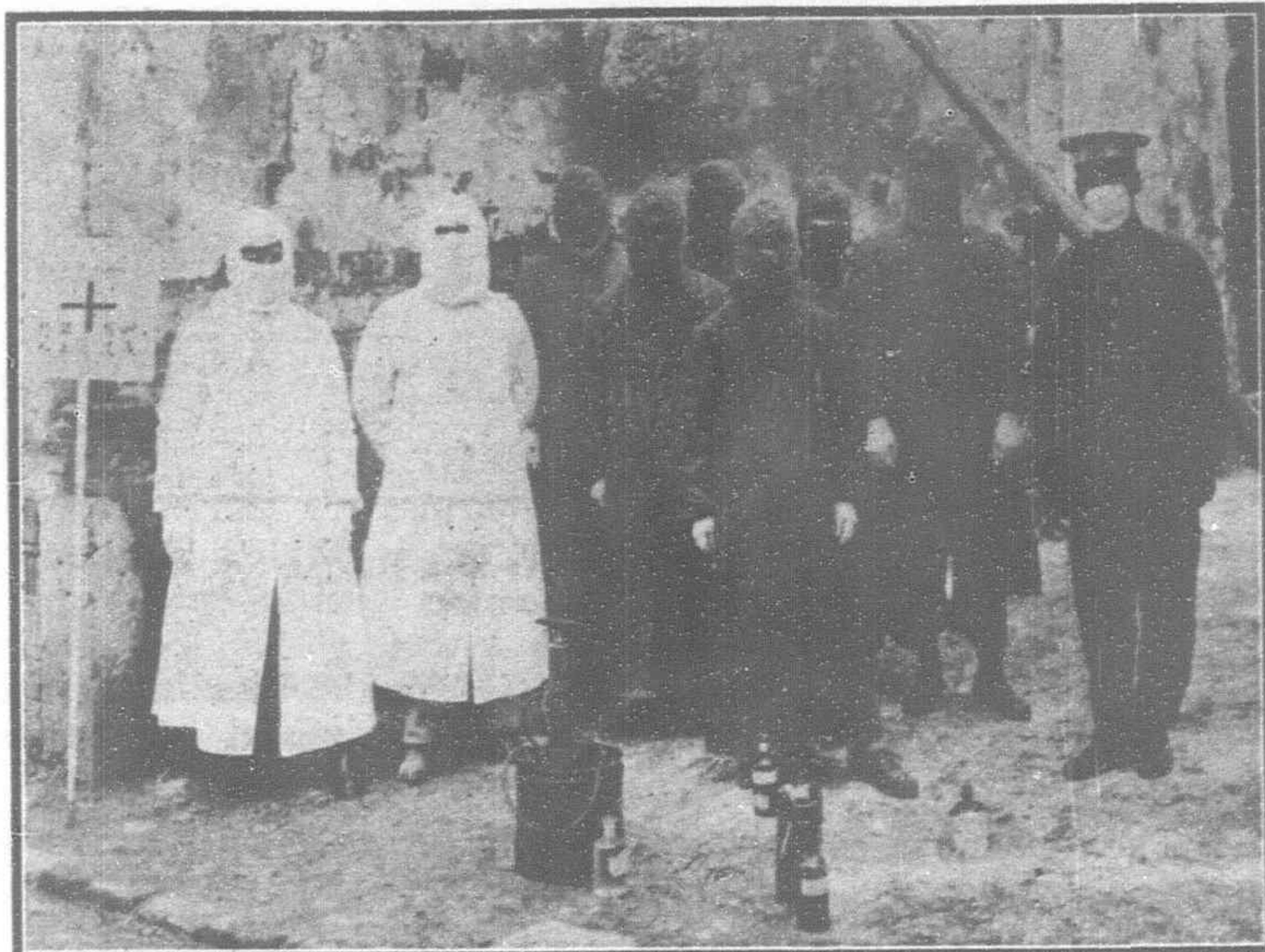
Another well-known figure in railway circles is Mr. K. Y. Kwong, chief engineer of the northern section of the Tsin-pu Railway, who has been connected with railway work for nearly thirty years. He was associated with Mr. Jeme Tien-yu, who has the honor of being the first Chinese to undertake successfully the construction of a railway, the Peking-Kalgan Line.

General Tinge, at the head of the Peking-Suiyuan Railway, is an English graduate, being a classmate of Mr. Barton, the Chinese secretary of the British Legation. He also is well experienced in railway work.

On the Shanghai-Nanking Railway is Mr. C. P. Yin, a graduate from America, whose studies have qualified him for the responsible position of Managing Director. Previously he was technical expert of the Railway Department of the Ministry. The foregoing notes are perhaps sufficient to indicate the caliber of the directors who at present control the several railways of China. They are men who have made some study of their business, and have been appointed for their qualifications and not because of personal influence. It should be added that all the men mentioned speak one or more European languages. In conclusion we may quote the opinion of a Shanghai journal, which, in the course of an article on China's railways, remarks: "China's 6,467 miles of railways are in most cases profitably and efficiently operated, when it is considered that China has known modern railroad operation not longer than a quarter of a century. The directors and managers of the Chinese Government railroads are foreign educated and in general understand their business."



FENGCHEN PLAGUE HOSPITAL, SIX NURSES AND THE BURIAL SQUAD



A FORCE OF PLAGUE FIGHTERS IN THE STREETS OF NANKING

China's Victorious War on Plague

An Account of a Thoroughly Scientific Medical Campaign in the Interior of China

[BY ALEX RAMSAY]

It can be said that one thing has been done well in China. This is the suppression of the outbreak of pneumonic plague which at one time threatened to overrun the country and which later threatened to continue until its transformation into the bubonic form was feared. Now it can truthfully be said that no apprehension on this subject is entertained. The absence of newspaper reports and newspaper comments confirms this. Plague no longer occupies a place in people's minds. Practically it is forgotten. And for a very good reason. It no longer exists.

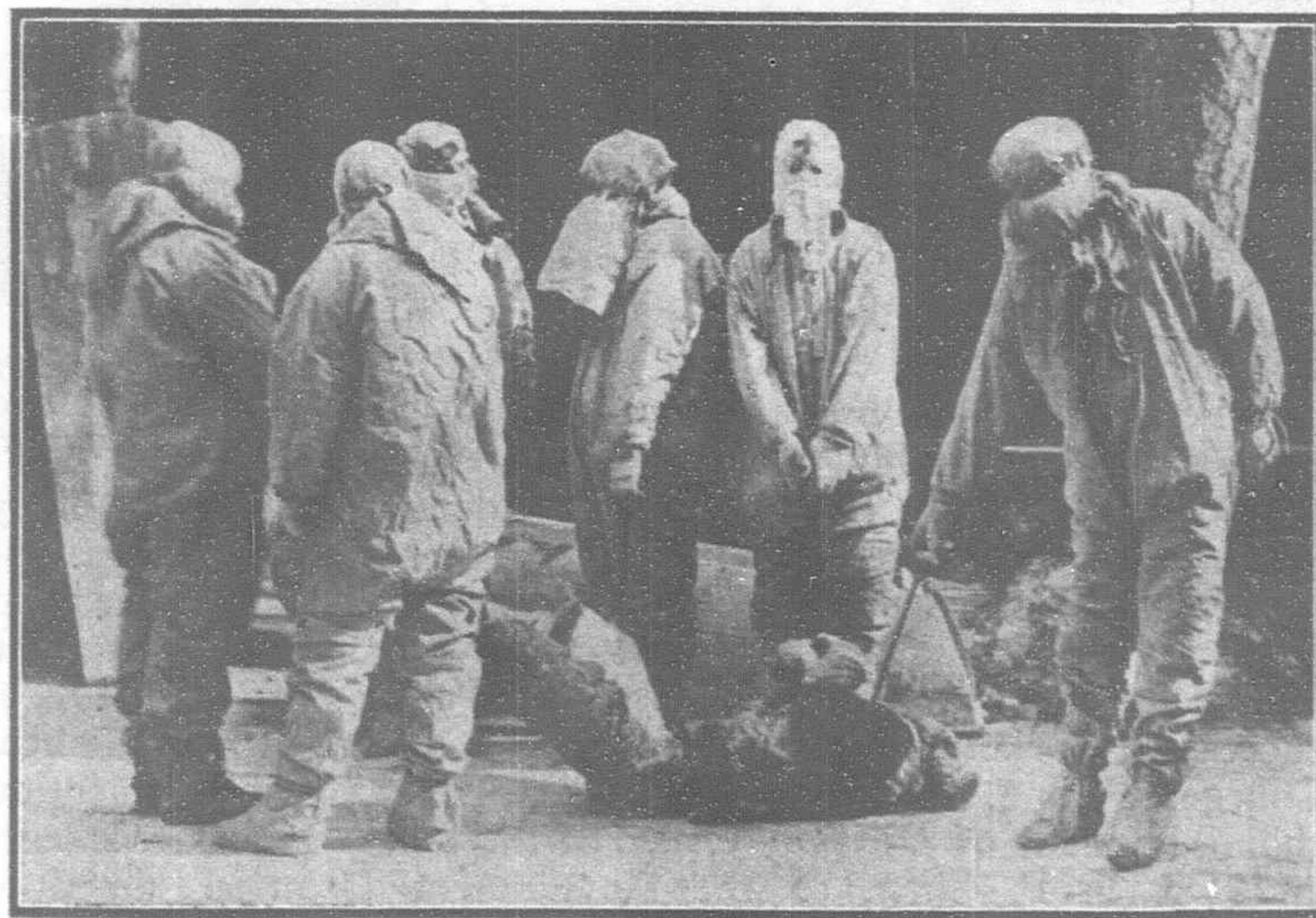
A brief survey of what has been accomplished in the suppression of this dread disease may not be out of place, especially when it affords a favorable comparison with the outbreak over six years ago in Manchuria and records distinct progress in knowledge and in methods.

The disturbing news that pneumonic plague had appeared in the Mongolian borderland was received about Christmastide last year, but the information was so vague that it was not until later

and fuller intelligence was forthcoming that its dreadful import was realized. There may have been some delay at this stage, but it was very little, and the authorities shouldered their responsibilities with a promptitude which was on the whole creditable, marking as it did, a distinct advance upon the indifference or ignorance of a previous régime which would have regarded the outbreak as a divine manifestation. The Plague Prevention Commission was immediately created, and was fortunate in having for its President General Chiang Chao-chung, who had the confidence of the foreign Legations. It may be explained that this confidence was largely based on the fact that he was a military man and was presumably on good terms with the military chiefs in whose districts the epidemic had appeared and with whom it was expected he could establish friendly relations, inducing them to support the medical and other measures deemed necessary in the circumstances. This confidence, it is pleasant to add, was not misplaced. He succeeded better than expected in setting up



A PLAGUE VICTIM AT HSIA TSAO CHUANG, HSINHSIEN



REMOVING THE CORPSE WITH HOOKS



MAGISTRATE CHANG, HIS STAFF, AND THE BURIAL SQUAD AT FENGTSUN, SINCHOW



A BURIAL SQUAD OUTS DE NANKING

coöperation between military and civil authorities with the medical gentlemen sent out to combat the plague and prevent its spread.

The difficulties of the plague fighters were enormously increased by the ignorance and superstition of the natives in these remote regions and in some cases by the indifference and selfish interests of local officials. It will be recalled that in the early days foreign doctors were attacked because they were believed to have extracted the heart from a man who had succumbed to this disease. A slight post mortem examination had led to this misunderstanding. In other places plague workers found themselves the object of bitter animosity and extreme hostility. Bricks were thrown at them, and it would have gone hard with some of these workers had they not obtained military protection. To be seen wearing a mask was to incite the resentment of angry villagers who looked upon these foreign methods as devices of the Evil One himself. Organizations established for dealing with plague were boycotted in certain cities and their efforts rendered nugatory. Under these circumstances it will be obvious that the suppression of plague was no light task and its successful completion is therefore all the more praiseworthy.

When prevention measures were first considered it was seen that it was necessary to guard the passes leading into Shansi and to close the gates on the Great Wall. Instructions to this effect were given but it was found that the cordon of troops thus employed was not sufficiently large or that the men intrusted with this work failed in their duty. Perhaps both reasons apply. At any rate, the epidemic which originated in the Mongolian cities of Saratsi, Paotou, and Wuyuan quickly spread to Suiyuan, and Fengchen, and into Shansi.

Foreign and Chinese foreign-trained doctors nobly responded to the call which this outbreak addressed to them. They volunteered their services and risked their lives in the cause of humanity and worked heroically and untiringly, often under most discouraging circumstances. Fortunately, not one of this noble band fell a victim to the dread disease. Perhaps one of the most successful workers was Dr. C. W. Young, of the Union Medical College, Peking. Another was Dr. Tucker, while mention should be made of Dr. Smyly, also of the Union Medical College, and Dr. S. P. Chen, of the Government Isolation Hospital. Neither should Surgeon General Chuan be overlooked, for he and a large number of assistants and students from the Military

Medical College undertook work in the most dangerous zone, in the region of origin itself. These names are mentioned simply because these men filled perhaps more responsible positions, but there are many, whose names are too numerous to mention in the course of this article, who labored devotedly and assiduously for the people of this great country whom they have learned to love and to pity. Their services cannot be too highly esteemed.

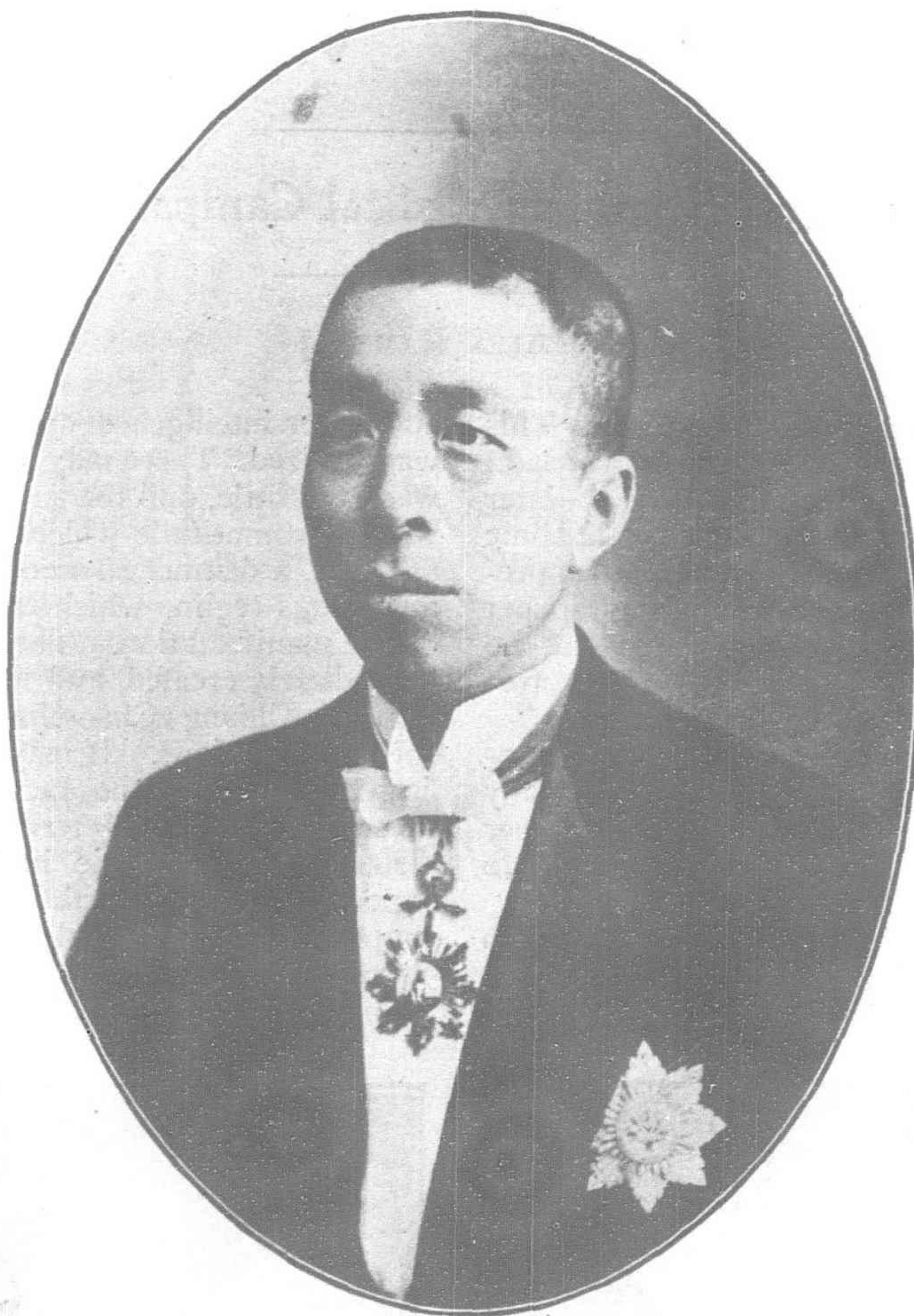
In spite of the efforts indicated to isolate the disease, cases appeared in the neighborhood of Pingshan and Tingchow, on the Peking-Hankow Railway, while later plague developed at Feng-

yuan near Pukow and at Tsinan, points on the Tientsin-Pukow Railway. Peking also was not free from the scare, three deaths due to plague occurring at Kuanganmen, while later there were three deaths in the East City. In most of these places the advent of plague was attributed to the military contravening the regulations for its prevention. Several plague deaths were also reported at Tungchow, near Peking, but in this instance it was impossible to trace infection from outside as the victims had been engaged on the new road between Tungchow and Peking, and there was no evidence of any outsider having arrived. Nanking also had experience of the epidemic, but the prompt measures taken to prevent its spread had the happy result of freeing the city with no more than twenty deaths.

The methods employed to check the pest were fairly simple. They consisted principally of isolating contacts or suspects, for which purpose various buildings were utilized as detention hospitals, burying or burning the dead, enlightening the people as to the precautions to be taken against a disease for which no remedy has yet been discovered, and shutting off all communication with infected or suspected areas. Naturally the exercise of these restrictions upon large numbers of people imposed great hardships and aroused keen

resentment, but the safety of the nation demanded that they be strictly carried out. Due regard was, however, paid to hardships so created and wherever possible consideration was given to affected interests, but this was not done before it was consistent with safety. The quarantine station at Nankow proved an effective barrier and undoubtedly saved Peking and all North China from the threatened visitation.

The photographs reproduced in these pages illustrate the methods employed. Doctors and assistants were garbed in long white gowns and wore masks to guard against infection by inhalation. Burial squads were likewise protected. These



HIS EXCELLENCY YÜ PAO-SHAN, VICE MINISTER OF INTERIOR,
ORGANIZER AND CONTROLLER OF NATIONAL PLAGUE
PREVENTION SERVICE

workers used long iron hooks in removing bodies. Such work was extremely necessary. Bodies were left lying as the unfortunate people dropped, constituting a grave menace to public health, and their internment was absolutely imperative. Occasionally burial was out of the question and they had to be burned—a violation of Chinese sentiment and belief which was condoned by the circumstances.

While it is impossible to record the actual number of deaths, the returns available are fairly satisfactory. Places which were too remote to receive assistance in the early stages are expected to furnish details on forms now being supplied, so that in time the record will be much more complete than it is at present. It is known that the total number of deaths is in the neighborhood of six thousand, possibly under rather than over that figure. Suiyuan and district contributed most to this aggregate, the estimate of this locality being between 3,000 and 6,000. In one factory there, employing 350 people, no fewer than 250 perished. In this connection it is interesting to remark that the recent epidemic, larger in area and more diffuse than that in Manchuria six years ago, caused fewer deaths and involved a less expenditure in its suppression.

The guiding genius in the great task of combating the plague was the Vice Minister of Interior, His Excellency Yu Pao-hsien. He it was, in conjunction with the Plague Prevention Committee, who had to plan out the measures necessary for its prosecution. He had to consider personalities. One man could hope to enlist the support of local officials in one center,

while in another he would utterly fail. This called for the exercise of considerable tact and diplomacy, and it is a tribute to Mr. Yu's knowledge of men and to his organizing and executive ability that he should have commanded the success which all acknowledge has attended his labors. Mr. Yu, who is forty-four years of age, is a native of Kiangsu. His earlier years were spent in Szechwan where his father was prefect. Coming to Shanghai he sat at the feet of an old-time teacher, but subsequently went to the International Institute in which he studied English, his later studies being prosecuted in Japan. After the Boxer trouble he returned to China, and entered the Board of Police in Peking under the Tsing Dynasty, subsequently being transferred to the Board of Interior on its organization as senior clerk and acting concurrently as a member of the Bureau of Constitutional Reform. On the establishment of the Republic, he was appointed chief of the Statistical Bureau and division chief in the Police Department. His next promotion brought him to the Civil Service Department, of which he was made chief. Entering politics, he was elected an expectant member of the Senate in the first year of the Republic, and entered on his senatorship on the restoration of Parliament. When that organ was dissolved he became Secretary to the Minister of Communications, and was soon after appointed to his present position as Vice Minister of Interior, and director of the Election Bureau. It is not too much to affirm that he is one of the few men of the present day in China who has laid his country under a debt of gratitude for valuable services rendered at a critical time.

The Peking Tramways and Pukow Port Agreements

French Ante-Bellum Industrial Loan to China

The projected tramway system for the city of Peking has been the subject of much talk in the past if of no actual development. And the talk continues, for it was recently reported that the Banque Industrielle de Chine had disposed of its rights in the matter of construction to a Japanese group.

The right to construct tramways in Peking was originally granted as a concession to a Chinese syndicate, but because the charter contained a clause providing that no foreign capital should be used, the syndicate was unable to raise the required capital within the stipulated period. Efforts were made to raise the money among Chinese, but without satisfactory result. As the time limit of the concession was approaching the syndicate endeavored in various ways to evade the stipulation regarding the nonemployment of foreign capital. Numerous plans were put before the representatives of foreign financiers, but none of them were regarded as being worthy of consideration. The chief aim of the Chinese at that period was to avoid the appearance of the foreigners in the matter, and as no foreigners would dream of lending money to a group of Chinese without proper control over expenditure the syndicate ultimately had to admit failure, and though strenuous attempts were made to induce the Government to extend the time limit they were fruitless.

Several foreigners from time to time endeavored to secure the rights to construct the tramways, and on March 2, 1914, the Government at Peking gave them to the Banque Industrielle de Chine in connection with the Industrial Loan agreement signed on October 9, 1913. According to this agreement the concessionaries can only transfer their rights to a French concern, so the talk of the transfer to Japanese interests must be baseless unless the Banque Industrielle has managed to induce the Central Government to agree to an amendment of the agreement. The

Banque Industrielle was prevented from proceeding with the construction of the system by the outbreak and continuance of the European War, coupled with internal troubles in China, and since it is alleged that a large portion of the loan raised was used by the late Yuan Shih-kai to forward his monarchical ambitions, the Government will have to make good the funds before work can be inaugurated as intended.

The agreements under which the Banque Industrielle holds the rights are as follows:

Text of the 1913 Loan Contract

The Industrial Loan Contract for the Chinese Government Five per cent Industrial Gold Loan of 1914

ARTICLE 1.—The present contract is concluded at Peking, October 9th, 1913, between the Government of the Chinese Republic (hereinafter called "the Government"), duly represented by His Excellency Hsiung Hsi-ling, Prime Minister and Minister of Finance, of the one part; and the Banque Industrielle de Chine (hereinafter called "the Bank"), a joint stock company (i.e., *Societe anonyme par actions*), the headquarters of which is at Paris, 13 Boulevard Haussmann, duly represented by Mr. A. J. Pernotte, Director-General of the said Bank, of the other part.

ARTICLE 2.—The Government authorizes the Bank to negotiate or to issue for its account a five per cent gold loan to the amount of one hundred and fifty million francs.

ARTICLE 3.—This loan is to be issued during the course of the year 1914 (3rd year of the Chinese Republic) at the time deemed favorable by the Bank, but not earlier than February 5th, 1914 (the fifth day of the second month of the 3rd year of the Chinese Republic).

It will bear the date of the issuance of the bonds, and will be denominated THE CHINESE REPUBLICAN GOVERNMENT FIVE PER CENT INDUSTRIAL GOLD LOAN OF 1914 (i.e., *Emprunt Industriel du Gouvernement de la République Chinoise cinq cent on 1914*) 3rd year of the Chinese Republic.

ARTICLE 4.—The proceeds of this loan will be employed solely for the establishment of national industries or for the construction of public works. The first work undertaken will be the construction of the Port of Pukow. In case the cost of that enterprise should not reach the full amount of the present loan, the Chinese Government would later make known the number and nature of the industries to be established and of the works to be undertaken, with the unused balance of the said loan (for example, the construction of the Hankow Bridge).

If the amount of the present loan is not sufficient for the execution of these various works, the deficit will be met as indicated in Article 15.

ARTICLE 5.—The interest upon the present loan will be calculated at five per cent per annum upon the nominal amount; it will be paid semi-annually, March 1st and September 1st, each year, by the Government to the bondholders through the intermediation of the Bank.

It will be calculated from the first day of the month during which the loan is issued.

The first coupon will be paid September 1st, 1914.

ARTICLE 6.—The present contract is made for a period of fifty years from the date of issue.

The amortization will begin with March 1st of the sixteenth year.

Subject to the reservation of the right of anticipated amortization, as hereinafter provided for, the amortization will be effected by annual installments in accordance with the amortization table attached to the present contract.

The sums necessary for the payment of these annual installments will be furnished by the Government to the Bank in two equal semi-annual payments under the conditions hereinafter stipulated.

The bonds will be retired by means of drawings by lot. These drawings will take place on January 15th, each year (except the first fifteen years, as stated above), for the amount provided by the amortization table annexed herewith. The repayment of the retired bonds will take place March 1st.

The Government reserves the right, after the expiration of ten years from the date of issue, at any time to repay wholly or in part the amount of the loan, subject to the payment of a premium of $2\frac{1}{2}$ per cent, in case of repayment before the twentieth year upon the nominal value of the bonds the repayment of which should not yet be required in accordance with the table annexed to the present contract.

After the twentieth year, repayment may be effected without any premium whatsoever.

Each time that the Government is to effect such an extraordinary repayment, it must give the Bank written notice at least six months in advance. The extraordinary repayments will be made by means of supplementary drawings which will take place at the same time as the ordinary drawings, that is, on January 15th, each year.

The bonds drawn at either ordinary or extraordinary drawings will bear no interest after the date on which they are repayable.

The repayments of amortized bonds, as well as the payments of their coupons, will take place at the Banque Industrielle de Chine in Paris.

The bonds to be repaid and the interest coupons falling due will be taken up and canceled by the Bank at the time of their being presented for payment. The Bank will turn them over in good order to the Chinese Minister in Paris.

The Bank will repay to the Government the entire amount of any bond or interest coupon which shall not have been presented for payment within thirty years of the date on which it was repayable.

When the loan shall have been entirely repaid, the present contract will at once become null and void.

ARTICLE 7.—The Government solemnly and without reserve binds itself to pay the interest punctually, to effect the repayments of the principal in conformity with the amortization table hereto annexed, and to keep all the engagements which it undertakes by the present contract.

The payment of interest and the repayment of principal of the present loan are guaranteed by the national industries and the public works mentioned in Article 4 of the present contract.

This guarantee constitutes a first lien (i.e., *une hypothèque de premier rang*) upon all these industries and works, upon all their material, upon their appurtenances, and upon their products.

If among the industries and works, the number and nature of which the Chinese Government may later be called on to make known as provided in Article 4, there are any that cannot be hypothecated (such as arsenals, mints, etc.), the Government will, in agreement with the Bank, designate another source of revenue to make good this diminution of the guarantee.

In case of the insufficiency of receipts from the said works, industries, on other pledges serving to guarantee the present loan, the Government must provide for the deficit out of the unused surplus which is the subject of Article 15, and, failing such a surplus, out of general revenues.

Article 8.—The funds which are to serve for the payment of interest or the repayment of bonds must be paid to the Bank at least fourteen days in advance of the fixed due dates.

These payments will be made by the Government to the Bank in sycee used in the ports of China where the payment takes place, or in national currency (when the latter shall be in circulation), and must be of an amount sufficient to cover the payments in gold to be effected in Europe.

The rate of exchange for these payments will be fixed with the Bank on the same day that the payment in silver is effected. The Government will nevertheless be at liberty to adopt a rate of exchange at any time during the six months preceding the date on which the payment is to be effected.

The Bank will pay interest at three per cent per annum upon the balance of funds paid, in advance of the fourteen days specified above, for the purpose of assuring the amortization service. Such interest will be reckoned from the day of payment to the fourteenth day before the due date.

The Bank will receive from the Government $2\frac{1}{2}$ per mill (one quarter of one per cent) as a commission upon all sums paid by it in payment of the coupons and repayment of the bonds.

Article 9.—The loan may be made in one or more issues, at the discretion of the Bank.

The Bank and the Delegate of the Government will make all arrangements necessary for the drawing up and publishing of the prospectuses concerning this loan, and for all other details, not mentioned in the present contract, likewise concerning this loan.

The Bank will issue the prospectus whenever it deems favorable, after having notified the Government seven days in advance.

The Government will give instructions to the Chinese Ministers accredited to the countries where the issue will be made to assist the Bank in all questions in which their intervention might be deemed useful by it, to sign the prospectus of the loan if that is considered necessary, and to furnish the documents needed for the purpose of obtaining official quotation on the various bourses.

The Bank will issue gold bonds with interest coupons attached for the whole amount of the loan, and will fix at its discretion the denominations.

It may make the bonds and keep them by it until the issue of the loan, as soon as it deems it appropriate to do so.

The form of the bonds as also the language and the currency adopted will be chosen by the Bank, which will for that purpose consult with the Delegate of the Government.

The bonds will be printed or engraved.

They will bear the facsimiles of the signature of the Minister of Finance and of the seal of his Ministry, in order to relieve him from signing, himself, all the bonds.

Before the issue of the bonds, the Chinese Ministers accredited to the countries where there is need therefor will affix to each bond their official seals and the facsimile of their signatures as proof that the issue and sale of these bonds are effected by agreement with the Chinese Government, in its name and for its account.

The Bank will countersign the bonds.

Article 10.—The net price paid to the Government for the whole of this loan or part of this loan will be eighty-four per cent (84 %).

The engraving and printing of the bonds are at the expense of the Government.

The Bank will retain on deposit in Europe, out of the first payments on the loan, an amount sufficient to assure the full payment of the coupon for the first six months' interest, and the Bank's commission of $2\frac{1}{2}$ per mill in connection with this payment.

The Government herewith authorizes the Bank to pay this interest coupon with the amount so retained.

Article 11.—The Bank will open in its books a "Chinese Republican Government five per cent Industrial Gold Loan of 1914" account.

After setting aside the sum necessary for the payment of the first half-yearly coupon and the commission of $2\frac{1}{2}$ per mill connected with this payment, the Bank will place to the credit of the said account the proceeds of the loan, in conformity with the terms of the first paragraph of Article 10, as soon as they come in. The Bank will be responsible for these deposits.

The credit balance of this account will bear interest to the profit of the Government at the rate of three per cent per annum.

As the manner of withdrawing these funds must depend upon the nature and number of the national industries and public works to be undertaken, it will be determined by subsequent agreement between the contracting parties.

It is nevertheless agreed henceforth as follows:

1st.—The withdrawals can be effected only upon arrangement with the Bank, and for payments for materials and for work and for the land required for the construction of the said industries or public works.

The transfer of the funds from Europe to the various places in China where they may be needed will be effected through the Bank, it being understood that the rate of exchange fixed by the latter by arrangement with the Government will be the same as the average official rate of the other European banks established at the same places.

This rate may be fixed on the day of transfer or during the six months preceding the date on which the transfer is to be effected.

Article 12.—All the bonds, all the coupons, and all the payments made or received in connection with the service of the present loan, will be exempt from all Chinese imposts and taxes during the currency of the loan.

Article 13.—If any of the bonds issued for the present should be lost stolen, or destroyed, the Bank will give notice thereof to the Minister of Finance at Peking, as also to the Chinese Minister accredited to the country in which that bond may have been issued.

The latter will authorize the Bank to publish in the newspapers notice that all payment upon that bond is stopped, and to take all measures which may be necessary under the circumstances, in accordance with the laws and usages of the country.

If the bond has been destroyed, or if the lost or stolen bond cannot be recovered during the period fixed by the Bank, the Chinese Minister accredited to the country of issue will affix his seal to a duplicate of that bond, of the same nominal value, and will deliver it to the Bank as the representative of the owner of the lost, stolen, or destroyed bond.

Article 14.—The investigations with a view to the establishment of such industries or the construction of such public works as are contemplated by Article 4, above, must be begun within as short a period as possible after the issue of the loan.

The apportionment of the fund among the various enterprises, the amount of time for the work, the status of the administrative and technical personnel, as well as all other questions which can be investigated only after a decision has been made as to the number and the nature of the industries and works to be undertaken, will form the subject of a special arrangement between the Government and the Bank, which will be annexed to the present contract.

But it is agreed henceforth as follows:

1st.—Such materials of Chinese origin as it may be possible to procure in China itself must be obtained there.

2d.—In so far as it may be necessary to buy abroad, the choice will be given to French products. The Bank will exert itself to the utmost

in order that they may be obtained of the best quality and at the lowest price possible. But if any article should be obtainable in any country, other than France, under better conditions as to price and quality, they should be procured in that country, in which case there would be allowed to the Bank a commission of five per cent of the purchase price of that article.

3d.—All orders for the purpose of construction—both those given in China and those given abroad—shall be exempt from all customs duties, imposts and likin, on their entry, and in transit in Chinese territory, subject, however, to the understanding that this stipulation will not stand in the way of the Government's right to impose upon these orders eventually the same imposts that may be paid upon those destined for the construction and completion of all other similar national industries and public works in China.

4th.—The Bank will not have to meet, out of its own funds, any expense in connection with the construction and operation of the said industries and works.

Article 15.—If the proceeds of the present loan are not sufficient to complete the construction and equipment of such industries and public works as are specified in Article 4 of the present contract, the deficiency will be made up in the following manner:

In the first instance, such funds as the Government might have at its disposal will be used, so as to permit of the continuation, without interruption, of the works under construction.

The funds so used would be considered as constituting a part of the capital of the said industries and public works; but the dividends to which that capital might be entitled may not in any respect weaken the stipulations which assure the payment of interest and the repayment of the principal of the present loan.

If the Government has no funds at its disposal, or if they are not yet sufficient to make up the deficiency, the Bank will issue, upon the terms of the present contract, a new series of the loan, to the amount necessary for the entire completion and the placing into definitive operation of the national industries and public works specified in the present contract.

This new series would enjoy the same guarantees and would be placed in all respects on the same standing as the earlier series, of a total amount of one hundred and fifty million francs, of the present loan.

If, after the completion of the said industries and public works, there should remain an unused surplus of funds, this surplus would be turned over to the Bank, and would constitute a reserve for the payments for which the Government is responsible by virtue of the present contract.

Article 16.—The Government alone will take charge of the operation and management of the industries and public works established with the proceeds of the present loan.

For the operation of each of these works or industries, there must be engaged a European Engineer-in-Chief and an Auditor-General. These agents will be engaged by the Director-General of each enterprise, in agreement with the Bank; and the terms of engagement will be determined upon an understanding between the Director-General and the Bank.

(The above clause does not apply to such industries and works as are not pledged to the Bank, as provided in Article 7 of the present contract.)

Article 17.—From the time of the putting into definitive operation of the industries or works constructed by means of the proceeds of the present loan, the Director-Generals of the said works or industries will place the orders for supplies to the best advantage of the enterprises; but under equal conditions of price and of quality, French industries—and among firms of that nationality, those recommended by the Bank—will have the preference.

In the event of its being desired to appoint one or more foreign firms as agents for the ordering of supplies of any sort for the operation of the said works or industries, the firms recommended by the Bank will, under equal conditions, have the preference over others.

Article 18.—Subject to all the obligations that it has undertaken by the present contract, the Bank will have the right to transfer or to delegate all or part of its rights, powers, and advantages to any other bank, company, or group, or to any agents or administrators, with powers of substitution in whole or in part.

It is understood that such bank, company, or group, to which delegation or substitution is made in pursuance of the foregoing paragraph, must be of French nationality.

Article 19.—The present loan must be sanctioned by Presidential Mandate. The promulgation of the Mandate will be confirmed officially, and without delay, by the Waichiaopu (Foreign Office) to the Minister of the French Republic at Peking.

Article 20.—In case of doubt or difference of opinion as to the interpretation of the present contract, the meaning indicated by the French text will alone be authoritative.

Done at Peking in four copies, two of them for the Government and two for the Bank, in French and in Chinese.

Peking, October 9th, 1913.

A Supplementary Agreement

Contract Supplementary to the Contract, Concluded October 9th, 1913, for the Chinese Republican Government Five per cent Industrial Gold Loan of 1914

The present supplementary contract is concluded at Peking, December 5th, 1913, between the Government of the Chinese Republic (hereinafter called "the Government"), duly represented by His Excellency Hsiung Hsi-ling, Minister of Finance and Prime Minister, of the one part; and the Banque Industrielle de Chine (hereinafter called "the Bank"), a joint stock company (i.e., *Societe anonyme par actions*), the headquarters of which is at Paris, 13 Boulevard Haussmann, duly represented by Mr. P. Sellier, attorney of the said Bank, of the other part.

The Government and the Bank, referring to their contract of October 9th, 1913, for the 5 per cent Industrial Gold Loan of 1914, for 150,000,000 francs, and deeming the time proper to define certain of its stipulations which it was impossible for them to determine at the time of signature of that contract, in regard to the works contemplated by that contract or the manner of execution of some of those works, have mutually agreed as follows:

Article 1.—*Supplementary Works.*—In case the cost of the Port of Pukow should not reach the full amount of the loan, the unused balance of that loan must be employed for the construction of other works of public utility (for example, the Hankow Bridge), as to the number and nature of which the Government and the Bank must come to an agreement in advance.

Article 2.—*Land Required for Construction.*—The Government undertakes, gratuitously and free of all duties, taxes, or charges of any sort, to put at the disposal of the Bank for the purpose of carrying out those works, all the land required for the entirety of those works,—that is, in so far as particularly concerns the Port of Pukow, all the land necessary for the construction of quays, basins, stores, warehouses, docks, etc., in short, all the equipment of the port as called for by the general plan elaborated in the final investigations of the project and sanctioned by the Government,—it being clearly understood now and hereafter that this land must be of a depth of at least five hundred meters along the whole length of the port works.

It remains clearly understood that this land is put at the disposal of the Bank only for the construction of buildings and working plant, and remains fully and entirely the property of the Government, to the profit of which it is to be exploited.

Article 3.—*Handling and Transfer of Funds.*—1st.—The proceeds of the loan will be placed to the credit of an account, called "Port of Pukow account," which will be opened by the Bank in Europe (Gold account in Europe).

2nd.—The proceeds of the loan will be deposited to the credit of this account in successive payments, in conformity with the conditions accorded to subscribers to the loan.

3rd.—The Bank will be responsible for these deposits.

4th.—The credit balance of this account will bear interest to the profit of the Government. The rate of such interest will be three per cent per annum.

5th.—After deducting the amounts to be paid and to be retained out of the proceeds of the loan, in accordance with the loan contract, the

Bank will hold the credit balance, plus current interest, at the disposal of the Director-General of the works, for the carrying out of the works.

6th.—An amount sufficient for all payments for materials and personnel will be left in Europe.

7th.—The Director-General may, as he sees fit, after first coming to an agreement with the Bank on the subject, transfer the loan funds to China.

8th.—The transfers effected during the course of one week may not exceed 3,000,000 francs, without the consent of the Bank.

9th.—These transfers will be effected through the Bank, or through any other bank designated by it, and the amount will be deposited to the credit of the "Port of Pukow Account" (Gold Account in China) on the Bank's responsibility.

10th.—In conformity with the table, drawn up by the Engineer-in-Chief, of expenditures to be made in China during the following month or months, the Director-General will determine the amounts to be transferred from the available gold credit to be converted into Chinese silver.

11th.—This conversion will be made by the Director-General through the Bank on any other bank designated by it. It cannot include more than the sum required for one month, unless the Bank consents thereto.

12th.—The proceeds of the conversion will be deposited with the Bank in a current account to the credit of the "Port of Pukow" (silver account in China). It will bear interest at the rate fixed in accordance with the rules in force for current accounts of this category.

13th.—All orders for payments, addressed to the Bank in China, will be signed by the Director-General and the Engineer-in-Chief, jointly.

14th.—Of such orders, those to the order of European contractors or furnishers will be paid directly to the latter by the Bank and on its responsibility. Those to the order of Chinese subjects will be paid by the Bank to an agent, designated by the Director-General, against the agent's receipt, and on the responsibility of the Director-General. This agent will deliver such funds only upon a requisition signed by the Director-General and the Engineer-in-Chief.

15th.—The Director-General and the Engineer-in-Chief still have the most absolute control over all expenditures and receipts of the port.

16th.—During the currency of the loan, the accounts of the port will be kept in Chinese and in French, in accordance with the modern method.

17th.—The Director-General and the Engineer-in-Chief will publish annually, after the closing of the account for the period, a report in Chinese and in French, showing the receipts and expenditures in the operation of the Port. The public may have access to this report on request.

Article 4.—*Construction Staff.*—1st.—The Chinese Government will name a Director-General for the construction and management of the Port. This official will permanently reside in the immediate neighborhood of the works. He will have full powers to act in the name and on behalf of the Chinese Government within the scope of the present contract. His emoluments will be fixed by the Chinese Government, in agreement with the Bank, and will be at the charge of the Port.

2nd.—The work of construction of the Port will be under the principal direction of the Director-General. The Engineer-in-Chief will be his subordinate.

3rd.—The Director-General and the Bank will by mutual agreement conscientiously choose the Engineer-in-Chief, who must be French, experienced, and honest.

4th.—The Engineer-in-Chief will decide upon all the investigations, plans, surveys, and estimates for the Port, will direct the carrying out of all the works, and will order the material, apparatus, and equipment necessary to assure its regular operation. All these actions must, however, be submitted in advance for the approval of the Director-General.

5th.—The Director-General will fix the amount of the emoluments of the Engineer-in-Chief, after having first come to an agreement with the Bank.

6th.—The Engineer-in-Chief will draw up a detailed statement of the European staff necessary for the construction, and will submit it for the approval of the Director-General. This staff, which will include the Superintendent (i.e., *Chef de service*), the Section-Chief (i.e., *Chef de*

section), the Auditor (i.e., *Chef de comptabilité*), etc., will be engaged through the Bank, which will place it under the orders of the Engineer-in-Chief.

7th.—As for the Chinese staff, whether technical or not, the Director-General reserves the right to choose it. He will place it under the orders of the Engineer-in-Chief. No employee, Chinese or European, may be engaged without the consent of the Director-General.

8th.—It is understood that Chinese subjects who have made special studies or who have acquired sufficient practical knowledge may be proposed by the Director-General to the Engineer, who will employ them on the same footing as the European employees; but it will be necessary to send them first to the Engineer-in-Chief, who with the assistance of the Technical Delegate of the Director-General will examine their qualifications.

9th.—The Director-General may, for serious misconduct (i.e., *pour faits graves*), demand the dismissal of the non-technical staff. As for the technical staff and all the European staff, the Director-General may ask their dismissal of the Engineer-in-Chief, who must give effect to this request if the reasons given are found to be sufficient.

10th.—The European staff must, in general, pay the greatest respect to the Director-General and his special representatives. It must respect the local authorities, and not meddle in the affairs of the country. It must likewise respect the manners and customs of the Chinese in order to live on good terms with the people.

11th.—The intention of the contracting parties in including the foregoing stipulations is to safeguard the prestige of the Director-General and to assure the regular progress of the work.

12th.—The Director-General also reserves the right, in agreement with the Bank, to delegate on the work one or more special representatives, with full powers. The emoluments of these representatives will be at the charge of the Port.

Article 5.—*Operating Staff*.—The Chinese Government alone will be in charge of the operation and management of the Port.

It will designate a Director-General therefor, who will be assisted by an Engineer-in-Chief.

This Engineer-in-Chief will be under the orders of the Director-General.

The Director-General and the Bank will by mutual agreement conscientiously choose the Engineer-in-Chief, who must be French, experienced, and honest.

The Director-General, in agreement with the Bank, will fix the conditions of his engagement.

In order to dismiss or dispense with the Engineer-in-Chief, the consent of the Bank in advance must be had.

The Auditor-General, who shall be of French nationality, will at the same time act as a controller over the proper use of the funds; he will be named by the Director-General, and approved by the Bank. He will sign, jointly with the representative of the Director-General, all orders for payment and accounting documents of whatever kind.

The representative of the Director-General and the Auditor will have the most absolute right of control over the receipts and expenditures of the Port.

Whenever it may be necessary to name technical agents for the Port, or to define their functions, or to decide upon their dismissal, the Director-General must consult with the Engineer-in-Chief, and act in agreement with him.

In case of disagreement between the Engineer-in-Chief and the Director-General, the difference will be submitted to the Ministry of Finance, which will finally decide the question.

Article 6.—*Operation During Construction*.—As the undertakings and works of the Port are completed, the Director-General and the Engineer-in-Chief will by mutual agreement make such arrangements as are necessary with a view to their operation.

The cost of such operation, as well as the interest due upon the loan during the period of construction, will be paid out of the proceeds of the loan.

Article 7.—*Guarantees*.—If on the date fixed the Government is in default in the payment of all or part of the semi-annual interest or

amortization, the Bank will have full power to exercise all rights of action arising out of such guarantees as are contemplated in Article 7 of the loan contract.

Article 8.—*The Bank Trustee*.—The Bank may act as trustee (i.e., *se porter trustee*) for the bondholders of the loan. It may undertake to represent them. It will have power to act in their name in all negotiations which might be necessary with the Government, or in all discussions concerning the present loan.

Article 9.—The present contract defines and interprets the loan contract of October 9th, 1913, of which it is to be considered as forming an integral part.

Article 10.—In case of doubt or difference of opinion as to the interpretation of the present contract, the meaning indicated by the French text will alone be authoritative.

Done at Peking in four copies, two of them for the Government and two for the Bank, in French and in Chinese.

Peking, December 5th, 1913.

Peking Public Utility Works Contract

Annex No. 1 to the Contract, Concluded October 9th, 1913, for the Chinese Republican Government Five per cent Industrial Gold Loan of 1914

Article 1.—The present contract is concluded at Peking, March 2nd, 1914 (the 3rd year of the Chinese Republic), between the Government of the Chinese Republic (hereinafter called "the Government"), duly represented by His Excellency Chow Tze-chi, Minister of Finance, of the one part; and the Banque Industrielle de Chine (hereinafter called "the Bank"), a joint stock company (i.e., *Société anonyme par actions*), the headquarters of which is at Paris, 13 Boulevard Haussmann, duly represented by Mr. G. Lion, attorney of the said Bank of the other part.

Article 2.—Whereas:

1st.—Article 4 of the loan contract provides that in case the construction of the Port of Pukow should not require the full amount of that loan, the unused balance is to be employed for the construction of other works of public utility.

2d.—The Government and the Bank estimate that the full amount of the loan will not be required for the construction of the Port of Pukow.

It is agreed as follows:

Article 3.—The unused balance will be employed for the establishment of industries and the execution of works of public utility in the city of Peking, as follows:

1st.—Construction of Tramways.

2nd.—Reorganization and improvement of the electric light system.

3rd.—Reorganization and improvement of the waterworks.

4th.—Construction of a market.

5th.—Repair of old sewers and construction of new ones.

6th.—Construction of municipal buildings, museums, public gardens, etc.

7th.—Repair of old roads and streets and construction of new ones.

Article 4.—The industries specified above, their material, their appurtenances, and their products, guarantee the payment of interest and the repayment of principal of the industrial loan of 150,000,000 francs. This guarantee constitutes a first lien (i.e., *une hypothèque de premier rang*), upon the said industries, material, appurtenances, and products.

The payment of interest and the repayment of capital of that loan is furthermore guaranteed by the revenue from all the municipal taxes of Peking which are now or may hereafter be levied, such as land tax, tax upon carriages and rickshas, taxes upon water, gas, electricity, etc.

These guarantees constitute a first lien upon those taxes, present and future which the Government by the present contract declares to be free from any prior obligation.

Article 5.—The paragraphs of the loan contract of October 9th, 1913, and of the supplementary contract of December 5th, 1913, which relate to the manner of executing the works and the control of expenditures are applicable to the present annexed contract.

Article 6.—In case of doubt or difference of opinion as to the interpretation of the present contract, the meaning indicated by the French text will alone be authoritative.

Done at Peking in two copies, one of them for the Government and one for the Bank, in French and in Chinese.

Peking, March 2nd, 1914.

Alcohol Tax as Additional Loan Security

Annex No. 2 to the Contract Concluded October 9th, 1913, for
the Chinese Republican Government Five per cent
Industrial Gold Loan of 1914

(Translation)

Article 1.—The present Contract is concluded at Peking, March 2nd, 1914, the 3rd year of the Chinese Republic, between the Government of the Chinese Republic (hereinafter called "the Government"), duly represented by His Excellency Chow Tze-chi, Minister of Finance, of the one part, and the Banque Industrielle de Chine (hereinafter called "the Bank"), a joint stock company (i.e., *Société anonyme par actions*), the headquarters of which is at Paris, 13 Boulevard Haussmann, duly represented by Mr. G. Lion, attorney of the said Bank, of the other part.

Article 2.—Whereas:

1st.—Paragraph four of Article 7 of the Loan Contract provides that if among the industries or works that the Chinese Government desires to establish or to undertake with the proceeds of that loan, there are any that cannot be hypothecated, the Government will, in agreement with the Bank designate another source of revenue to make good this diminution of the guarantee.

2nd.—In agreement with the Bank, the Government has decided to devote a portion of the proceeds of the loan to the construction of municipal buildings, roads, sewers, etc., which bring in no immediate revenue, or the revenue of which is not sufficient to assure the regular service of interest and amortization at due dates.

It is agreed as follows:

The payment of interest and the repayment of principal of the Industrial Gold Loan of 1914 for 150,000,000 francs are additionally guaranteed by a first charge upon the revenues from the imposts upon alcohol, which are now or may hereafter be imposed by the Central Government in all the Provinces of the Territory of the Chinese Republic situated to the north of the Yangtze River. By the present contract the Government declares that the said revenue amounts annually to the approximate sum of 4,000,000 Taels.

It is furthermore agreed that this guarantee is effective only to the extent of such an amount as is annually necessary to assure the service of interest and amortization, the surplus remaining at the free disposal of the Government.

The Government declares that this guarantee, to the extent defined above, constitutes a first lien free from any prior obligation, charge, or lien. So long as the capital and interest of the industrial loan are paid by the Government regularly and at due dates, the Bank may not take part in the collection of the said impost; but if, on the date fixed, the Government is in default in the payment of all or part of the semi-annual interest or amortization, the Bank will have full power to exercise all rights of action arising out of the guarantee represented by the said impost.

Article 3.—In case of doubt or difference of opinion as to the interpretation of the present contract, the meaning indicated by the French text will alone be authoritative.

Dated, Peking, March 2nd, 1914.

Tobacco Production and Trade at Amoy

[BY AMERICAN CONSUL C. E. GAUSS]

The Amoy district produces about 10 per cent of the tobacco grown in China, and exports it in leaf as well as in prepared form to other Chinese ports and to Formosa, Java, and Sumatra. The imports of cigarettes amount to about \$100,000 United States currency annually. Two classes of tobacco are grown in the Amoy district—kau hung, black tobacco, and tiao si hung, brown tobacco. Black tobacco is raised principally in the region of Siokhe, south of Changchow, and Pengho, near the border of Kwangtung. It is estimated that the annual crop is valued at about \$500,000 United States currency. Part of this is sent to Amoy, part to Swatow, and a considerable quantity finds its way for consumption to the interior of Fukien and Kwangtung.

Considerable quantities of the tobacco received at Amoy are exported by Japanese to Formosa. The average price per tobacco picul of about 200 pounds is \$17 local currency. A picul of tobacco contains 100 tobacco catties, equal to about 150 ordinary Amoy catties of $1\frac{1}{3}$ pounds. The finest black tobacco comes from Changtai, the district northeast of Changchow, and its value is considerably higher than that of ordinary black tobacco, the first grade costing \$100 local for 200 pounds. Of the black tobacco produced in Amoy, exports are principally to the Dutch East Indies, where the Amoy Chinese prefer their own product. Some goes also to the Straits Settlements. In leaf it goes to Formosa.

Tobacco leaves are gathered in this district in May. The black tobacco is prepared in Amoy by first stripping the leaves, then applying a small quantity of peanut oil and water, after which they are pressed. When thoroughly pressed they are cut and dried in pans. The product is prepared for smoking in cigarette form. Cigarette paper is manufactured in Amoy, about 60 pieces being sold for one copper cent (about one half cent United States currency). Foreign tobacco papers sell at 200 sheets for 4 copper cents. They are of Japanese manufacture.

The annual exports of prepared tobacco from Amoy are valued at about \$300,000; of leaf and stalks at \$85,000. These figures include any brown tobacco that may be exported. Amoy people, both at home and abroad, prefer the black to the brown. The black is chiefly sent abroad and the brown to other parts of China.

Production of Brown Tobacco

Brown tobacco is produced in the Yung Ting district of Tingchow. It is estimated that the output of this district is about \$1,000,000 worth. In recent years brown tobacco has come to be grown in the Shonghong, Lungyen, and Pengho districts, but here the quality is poor. About 3,000 piculs of brown tobacco come to Amoy every year. It is prepared in the Yung Ting district, where it is produced, and not at Amoy. It is smoked in the familiar Chinese water pipes.

Some attempt has been made locally to manufacture cigarettes, including imitation Manila cigarettes, but failure has always followed. One shop, which employs about three hands, is engaged in making cigars from alleged Manila tobacco. The product is a crude, cheap cigar selling at a low price; but the Chinese are not cigar smokers, and those who prefer cigars have usually acquired the habit abroad and can afford to import Manila cigars of good quality.

The \$100,000 worth of trade in imported cigarettes is divided between a foreign company and a Chinese company. The former has factories in China, particularly in the north; the latter has factories in Canton, Singapore, etc., and is said to be a strong competitor for the cigarette trade of South China, which heretofore has largely been held by the foreign company. The Japanese have attempted to get into the market, but met with failure. The class of cigarettes that is sold is not high. Native leaf, mixtures of native and American leaf, and Virginia leaf tobacco are on the market. Few Egyptian cigarettes are sold. The retail price of the cheaper brands is 4 or 5 cents local currency for a package of 10—about 3 cents United States currency for 10 to 20 cigarettes.

Railway Car Conservation in China

Shipping Rules Effect Large Economies

[By JOHN EARL BAKER, ADVISER, MINISTRY OF COMMUNICATIONS, PEKING]

It was a celebrated railway official who phrased the maxim, "First load your cars, then load your trains." This maxim is merely a more terse mode of saying that operating efficiency is to be gained by obtaining the maximum possible load for each wagon, and by placing the maximum possible number of wagons into each train. To be sure, the maximum loading of cars and trains will not of itself insure the profitableness of a railway, for maintenance of way and of equipment, together with supervision require an expenditure larger than that of actually hauling the traffic. But in China, nearly a third of operating expense is to be found in the Running department, and hence this department offers considerable latitude for attempts to save. In countries where the art of organization has been well mastered and traffic is dense, it is in the running department chiefly that economies are studied most diligently.

Goods wagons are classed as "rolling stock" but every experienced railroad man knows that a wagon stands still much longer than it rolls. Wagons are designed to roll under a load of goods, but when actually in motion they are absolutely empty about one third of the time; and in many countries they are more than half empty much of the loaded time. To keep all cars in motion all the time with all the load each can carry is manifestly an ideal impossible of attainment, but it is the star toward which a railway manager directs his course. The Chinese Government Railways, taken as a system, are making a remarkable record in securing service from their goods wagons. So much is it the fashion to disparage Chinese methods that it is a pleasure to call attention to this fact.

To gauge the degree of managerial success in car handling, various measuring sticks are used, either singly or in combination. One combination is the average number of tons per loaded car used in conjunction with the average number of miles run per car per day. The larger the number of tons put into each car and the further each load runs each day, the fewer the number of cars required to carry a given volume of business each year. The logical sequence is a lower investment in cars, less dead weight of cars to be hauled, hence fewer locomotives required to haul a given weight of goods, a saving in repairs, in fuel, in trainmen's and enginemen's wages, and hence a more economical operation generally. But on Chinese railways, neither car mileage nor car loading statistics are compiled.

Another measure is an average number which combines the two elements just mentioned—load and distance—being expressed as ton miles or ton kilometers. As the kilometer is the unit of distance adopted by the Ministry of Communications, the ton-kilometer is the term to be employed in China. However, ton-kilometers per car would be a very inaccurate measure in China, for freight cars vary all the way from a ten ton four wheel truck to a forty ton eight wheel wagon. Hence to eliminate this irregularity, ton-kilometers per ton of carrying capacity is used. Such statistics are available. As required by the annual report to the Ministry of Communications, each line has inventoried its goods wagons and stated their aggregate capacity. The tonnage of goods from each station to every other station on a given line is recorded and the resulting kilometrage is computed.

On December 31, 1915, the aggregate capacity of all wagons on the 5,444 kilometers of Government railway was 243,070 tons. During that year approximately 2,376,252,000 ton-kilometers of transportation was produced. Dividing the number of ton-kilometers by the number of tons of carrying capacity gives a quotient in this case of 9,776 ton-kilometers produced by each

ton of carrying capacity. An absolute number of this sort means nothing to most people, but in comparison with another it may become very significant. We are accustomed to look to America for record breaking performances in connection with railway operation. Hence comparison with the American performance should be enlightening. But what do we find? The latest figures readily available here are for the year 1913. In that year the 86,978,145 tons of car capacity in America produced 301,398,752,000 ton miles—an average of 3,465 ton miles, or 5,576 ton kilometers per ton of car capacity. Compared on this basis, the Chinese performance is not only better than the American but surpasses it by fully three fourths—75 per cent. A recent news item states that "Railroad car efficiency in the United States increased eight per cent in 1916 over 1913, the best previous year." But this improvement which probably has been even bettered during the crucial year just past, falls far short of the Chinese record.

Another basis of comparison makes the disparity even more remarkable. If the total number of tons hauled be divided by the aggregate capacity of wagons, the Chinese record is sixty-five tons hauled per ton of carrying capacity during the year, while the American performance is twenty-four. On this basis, the Chinese car does over two and a half times as much work as the American car. What would it not be worth to America in the midst of her "meatless, sweetless, and heatless" days to double the work done by her freight cars?

Now, which is the fairer basis of comparison, "ton-kilometers" per ton of car capacity or "tons carried" per ton of car capacity? That depends much on how you look at it. Of course, ton-kilometers is the measure of actual work done by the car in a mechanical sense. Yet, in some ways, "tons carried" reflects more accurately the work done by managers and the good or bad effect of rules and other circumstances under which the work is done. This is made apparent by the considerations given in the following paragraph.

The "ton-kilometer" basis differs in result from the "tons carried" basis because of the difference in the average haul per ton. If the average haul per ton were the same in both countries, one basis of comparison would give the same result as the other. But the average American ton is hauled 236 kilometers while the average Chinese ton is hauled only 141 kilometers. It is manifestly unfair to the American car to hold rigidly to the "tons carried" basis, for the American car hauls each ton 95 kilometers—nearly sixty miles—farther than does the Chinese car. Yet, after a car is loaded and on its way, it does not take long to run sixty miles—not more than four or five hours. As stated above, the American car hauls only twenty-four tons of goods per ton of carrying capacity during the year. This means that for the average car to obtain a capacity load, carry it to destination, be emptied, and get to its next load, requires in the United States fully fifteen days. In China, the round is completed in five and one half days. There is a margin of nine and one half days between the two records, of which only a few hours is accounted for by the longer haul of the American shipment. That longer haul, however, is enough longer to encounter an intermediate terminal. We know that in such terminals delays of several days are often suffered. On the other hand, terminal delays are sometimes cut down to less than one hour. Any delay of more than one day to a loaded car is grounds for an inquiry. Hence, two days allowed for the longer haul in America should be sufficient to put the two services on a parity. If you consider the American haul shortened to agree

with the Chinese, then the American car to move from one full load to another requires thirteen days compared with five and a half by the Chinese car. If you consider the Chinese haul lengthened to agree with the American haul, then the comparison is seven and one half against fifteen. Taken either way, the *transportation* service rendered per unit in China is double that rendered similarly in America. Taken just as it stands, the achievement is a source of pride.

It would be very pleasant, indeed, to hand the entire credit for this result to the officers of the Chinese lines. Yet, however deserving they may be, the disparity between the Chinese and the American record is too great to be explained by a mere superiority in personnel. The attempt at such a compliment would be sure to fail.

The better record made by the Chinese car is made possible by several causes independent of the quality of the supervisions. One of these influences is to be found in the tariff provisions for assessing the charges. The bulk of goods shipped, move in car load lots. The weight of a carload is assumed to be at least the capacity of the car. "Ah, ha!" says the American manager. "There we have it. The Chinese figures are padded. If they fill up a car with feathers, they count it as forty tons, when they really are hauling only one ton." Theoretically he is right. But practically there is not much to the point. Nearly half of the tonnage carried is coal. Nearly a third is made up of wheat, rice, and other grains. These commodities are heavy for their bulk. Considerable of the remaining tonnage is taken into the statistics at actual weight. Since charges are assessed according to the capacity of the car instead of actual weight of the load put into it, the shipper puts in all he can. The roof is his limit if he has a closed car. To limit loads in open cars, a loading guage is placed over the lead from the main line, and the load must clear this guage. To prevent overloads of such heavy commodities as coal and ore, frequent weighings are required and in some cases a penalty of triple weights for the excess load is assessed to act as a deterrent.

But in America almost the whole effort is the other way round. American shippers have to be coaxed and threatened and rewarded to fill cars up, rather than penalized for filling them too full. This is because charges are assessed on the actual weight of load in the car. It must not be assumed by this that a shipper can order a carload into it one ton, say, and bill it to destination at the carload rate on one ton. To prevent this, minimum loads are prescribed in the tariffs. But the American business man has always been pressing to have these minima made as low as possible. It makes leading easier, and a low minimum often permits him to ship a small lot of goods at a much lower cost than if he had to pay the less-than-carload rate. Hence he is able to secure many sales which otherwise would be lost to him. The competition between the many railroad lines has made the railroads very weak in resisting the attempts to lower minimum carload weights. In fact, many have voluntarily been put low to further the policy of developing business. Besides, most minima were established a number of years ago, when the typical car had a capacity of only thirty tons. In the meantime, the capacity of cars has been increased to forty, fifty, and even sixty tons. In the meantime also regulation of railroads has become effective, and a minimum cannot be increased without something akin to a lawsuit before from one to a dozen commissions. The result is that very frequently a fifty ton car is moving under a ten ton load. Very recently, as a war measure, because of the shortage of cars, the Food Administration has issued orders raising minimum loads on foodstuffs drastically. Wheat, oats, corn, rye, and barley must be loaded to the capacity of the car. However, the minimum load for rice is only thirty tons, for flour it is only twenty-five tons, for cured meats, cheese and lard, fifteen tons, and for butter and fresh meat twelve tons. The carrying record of the American car for the year 1918 will undoubtedly far exceed anything in its past, but it is a safe wager that even in 1918 it will fail to approach the Chinese record.

Because of rules governing the service, the Chinese car is usually loaded full, while the American car is often less than a quarter full. Because of rules also, the Chinese car is permitted to move quickly from one load to another. In China, the rule

has been that twelve hours of daylight were allowed for the loading or the unloading of a wagon. On the Shanghai-Nanking line, this "free time," as it is sometimes called, was restricted to six hours. The further right was reserved, in case unloading had not been commenced within four hours, to shunt the loaded wagon to a godown, unload it with station forces, add these labor costs to the freight charges, and assess storage at five cents a ton per day until the goods were removed. Recently, by order of the Ministry of Communications "free time" for loading or unloading has been fixed uniformly on all Government lines at six hours.

In America, on the other hand, except on a few special classes of equipment, "free time" runs for forty-eight hours succeeding the first 7:00 a.m. after the car is placed at the disposal of the patron for loading or unloading. For example, if a car of wheat be placed on the particular track used by the Blank Company at 8:00 a.m., March 5, to be unloaded by said company, they have until 7:00 a.m., March 8, in which to do the work. If this length of time be taken at both ends of the shipment, that car would be standing still six days in order to handle a consignment that required no more than twenty-four hours for its movement. In addition, Sundays and holidays in America are included as "free time." Although Chinese rules do not sanction any holidays, doubtless practice allows considerable leeway at the period of the Lunar New Year, but in spite of devoted missionary work these many years, commercial China knows little about Sunday. Right here is an advantage of about fifteen per cent enjoyed by the Chinese car.

In addition to the long "free time" allowance, the American car has labored under the further handicap of having the free time period largely disregarded. This could be done with relative impunity, for with a few local exceptions the penalty was only \$1.00 per day per car, regardless of capacity. Thus it was frequently cheaper for the consignee to use wagons for storage purposes than to build warehouses. There is an especial temptation to this procedure when the receiver of goods is a middleman who expects to sell the cargo at an early date. By a little delay he may avoid the expense of handling, both off this car and on to another, together with losses from breakage and the like. There is a well authenticated case of an itinerant dealer who shipped a carload of fruit—minimum weight of course—to a city in the Intermountain territory. His car was one of the well-built, felt insulated variety with ice compartments, designed especially for carrying fresh fruit across the continent. After disposing of a part of the load and finding that the city offered a good market during the hot season, he arranged to have smaller shipments arrive by express daily. These he stored pending sale in this refrigerator car. In that manner he prevented the car ever becoming empty. He had ice delivered to this car daily to keep his commodities in good condition. He paid the demurrage charges regularly but he would not release the car until the season was over,—when he sold out and decamped. For forty days at a nominal cost of \$1.00 per day he had secured the use of a most efficient cold storage warehouse and the land that made the approaches to it with no further charge for rental. He had the services of watchmen and fire fighting organization which the railroad maintained in addition to the city forces. And when the market was no longer profitable he did not have to linger a single day. He was free to abandon the place with no leases, fixtures, or maintenance to trouble him. Meanwhile, the fruit shippers of California were hounding railway officials, lest their produce perish for lack of transportation to market.

For some time the demurrage penalty in the state of California was \$3.00 per day on business wholly within the state and \$1.00 per day per car on interstate business. It is a significant co-incidence that three times as many cars proportionately were held beyond "free time" under the \$1.00 rate as under the \$3.00 rate. The total sum of demurrage paid at the \$1.00 rate was much larger in comparison with the number of cars used than under the \$3.00 rate. It is on this principle that the Chinese demurrage rates are so effective. The rates vary among the several lines. As a rule, they are based upon the capacity of the car. The rate per day is as low as 15 cents per ton capacity on the Peking-Hankow line and as high as 50 cents per ton capacity on the Peking-Mukden line. Thus, on the

former line, the penalty per day on a forty ton car is \$6.00 while on the latter it is \$20.00. Contrast this with \$1.00 per day in America, on a car the same size or larger. Take into further consideration the cost of labor for handling goods in China as compared with America. Thus, one realizes why it is that in China wagons are "released" promptly, and the advantage they have from this source in the competition for performance honors.

Then, too, there is the effect of a decided difference in car supply. In China cars simply must move fast. In America they may be allowed to move more leisurely. The American car supply has been designed to meet "peak loads." At all the more important points there are many alternative routes open to almost every shipper. If on any day a shipper could not secure from one road as many cars as he thought he wanted, he unhesitatingly routed his business by another line. Besides, large enterprises want to see a supply of cars on hand sufficient for two or three days' needs ahead, so that if deliveries of empty cars on any one or two days should be irregular, there will be no need of reducing the output. The result has been that except on rare occasions, there have been a large number of idle cars,—reserve cars in fact—whose presence goes far to reduce the average amount of work done by all cars. Generally reports of car shortage in America have been highly exaggerated. For as soon as a diminution in the number of reserve cars began to be noticeable, each large shipper in order to protect his interests, as he conceived them—began to order perhaps double the number of cars he required. This was the result of the rule of law which required railroads to distribute cars in time of shortage in proportion to the number demanded in each order. Not content with making his demand from the railroad which usually served him, he repeated them, in part at least, to competing lines. The natural result of course was a great hue and cry for cars beyond all requirements. It is doubtful if a single ton of freight actually perished or was even seriously delayed for the sole reason that there were insufficient cars in America—that is, prior to 1917.

In China, however, there is a car shortage of long standing. It attracts little notice for it is a chronic condition. Shippers must take their turn. And perhaps to some, their turns never come. Why is it that so-called "transportation" companies flourish at almost every large station? The reflections sometimes made upon the integrity of Chinese railway personnel may generally be traced to these circumstances. Scandals affecting even Cabinet Ministers have been possible because of these conditions. A car shortage in China does not mean merely that officers must step lively to place cars where they are needed. It means that shipments must wait, and perhaps not move at all. Last autumn, on one Chinese line, thousands of tons of wheat and rice were piled up at stations protected from rains only by sacks and matting. It could not move, for there were no cars. Under such conditions you may be sure that when a shipper succeeds in getting a car he requires no urging to fill it full and do it quickly.

So far as the Chinese record of car performance represents a car shortage that is real, so far it is a national loss. The railroad loses in revenue. The dealer loses in commodities which spoil while awaiting shipment. The producer loses in the lower prices which the dealer must offer because of the danger from loss. The consumer loses in the reduced supply. Every one loses. But so far as this record springs from the complete use of car space and the efficient use of car time, so far it is a national asset. In some forms of human endeavor "They also serve who only stand and wait." But in the case of cars, the stiller they stand and the longer they wait the less they serve. The rules and practice followed in China have made cars to "fetch and carry" rather than to "stand and wait." The money value of these regulations is no small item. To bring the equipment list of the Chinese Government Railways up to the same relative adequacy as the American supply, would mean at least a doubling of the present aggregate capacity—or an addition of 243,000 tons. This calls for 6,075 cars of an average capacity of forty tons each. Such a car before the war could be delivered in China for about \$3,000. So the additional investment required for cars alone would be \$18,225,000. At six per cent for interest and four per cent for depreciation, charges for the year

from these items would amount to over \$1,800,000. Repairs would probably require \$100,000 more. Terminal sidings and loops would have to be increased. There would be more empty cars to haul and more weight of car per ton of goods the haul, hence, more locomotives to buy and to repair, more fuel, lubricants, and other supplies consumed. Does any one doubt that, all told, these items would mount to an annual increase in charges of over \$2,000,000?

At this moment Chinese railways need more cars. Used as efficiently as the present supply has been, it would not take many to make possible a very gratifying increase in service and in revenues. No one thinks seriously, of course, of doubling the supply very soon. China has avoided and can continue to avoid the conditions which in the United States resulted in a supply of cars that in time of peace was simply wasteful. But right now we should all be glad for those wasteful years. By approximating the Chinese record in car performance, America may now realize upon the vast reserve capacity in her car supply of which hitherto she has been unaware. In her crisis she is doing many unusual things to load her cars and to load her trains to the utmost. The Chinese record indicates how much more can be expected of her railroads ultimately. By this much, it gives confidence to the Allied cause.

The Tsinghua Question

Much anxiety has been expressed lately in American educational circles and among Chinese returned students about the present status of Tsing Hua College, the institution founded and maintained by the Chinese Government for the preparation of Chinese students to whom the Government grants scholarships in America. The accusations brought against Dr. Tsur Ye-tung, once Dean and, since 1913, President of the College, have resulted in his resignation, and the entire Peking community is not only convinced that an injustice was done Dr. Tsur, but also that his removal was suggested to those who accused him by a political clique with ulterior motives which it is not diplomatic to define. Apart from the character of these motives, any attempt to involve the administration of Tsing Hua College in Chinese petty politics must rob the institution of much of its prestige and usefulness, and must therefore be resented by all Americans and Chinese students returned from America who are either directly or indirectly interested in education in this country.

In 1908 the United States Government announced to China its intention to reduce the Boxer Indemnity claim from \$24,440,728 to \$13,655,472. The Chinese Government then undertook to use the annual remittances to educate Chinese students in America, and later announced its intention of establishing a preparatory school at Tsing Hua to train the successful candidates for scholarships in America. It was understood that a member of the Legation staff should have a voice in the direction of the institution. The agreements entered into were not precisely hard and fast in a legal sense, but were binding upon China in a moral sense.

Recently, when the United States Government, together with the Governments of the Allied Powers, agreed to the suspension of Boxer Indemnity payments for a period of five years the Ministry of Foreign Affairs gave a clear understanding that China would continue to send students to America and to maintain Tsing Hua College on the same financial basis that has prevailed heretofore.

In the maintenance of Tsing Hua College, in its freedom from political meddling and the arbitrary reduction of its subsidies, Americans have an intense interest and a sound moral right to demonstrate that interest. The removal of President Tsur, the Waichiaopu's control of expenditures in minute detail and the recent attempt to appoint to the Presidency a man who is not an American returned student show a new tendency towards a kind of control of Tsing Hua which every one is convinced is opposed not only to the interests of the College but also to American influence and interests in China. The checking of this tendency must primarily be left in the hands of our diplomatic representatives in China, but it is the business of every American organization in China to see that all Americans clearly understand the situation and that they are prepared to support our diplomatic representatives by concerted action or propaganda when called upon. A similar duty devolves upon the Chinese returned students and their various organizations.—*Peking American News Bulletin*.

MILITARY ENGINEERING IN SHANGHAI



FIGURE 1. TWO FRAMES BEING LIFTED INTO POSITION



FIGURE 2. A SINGLE SLING BRIDGE

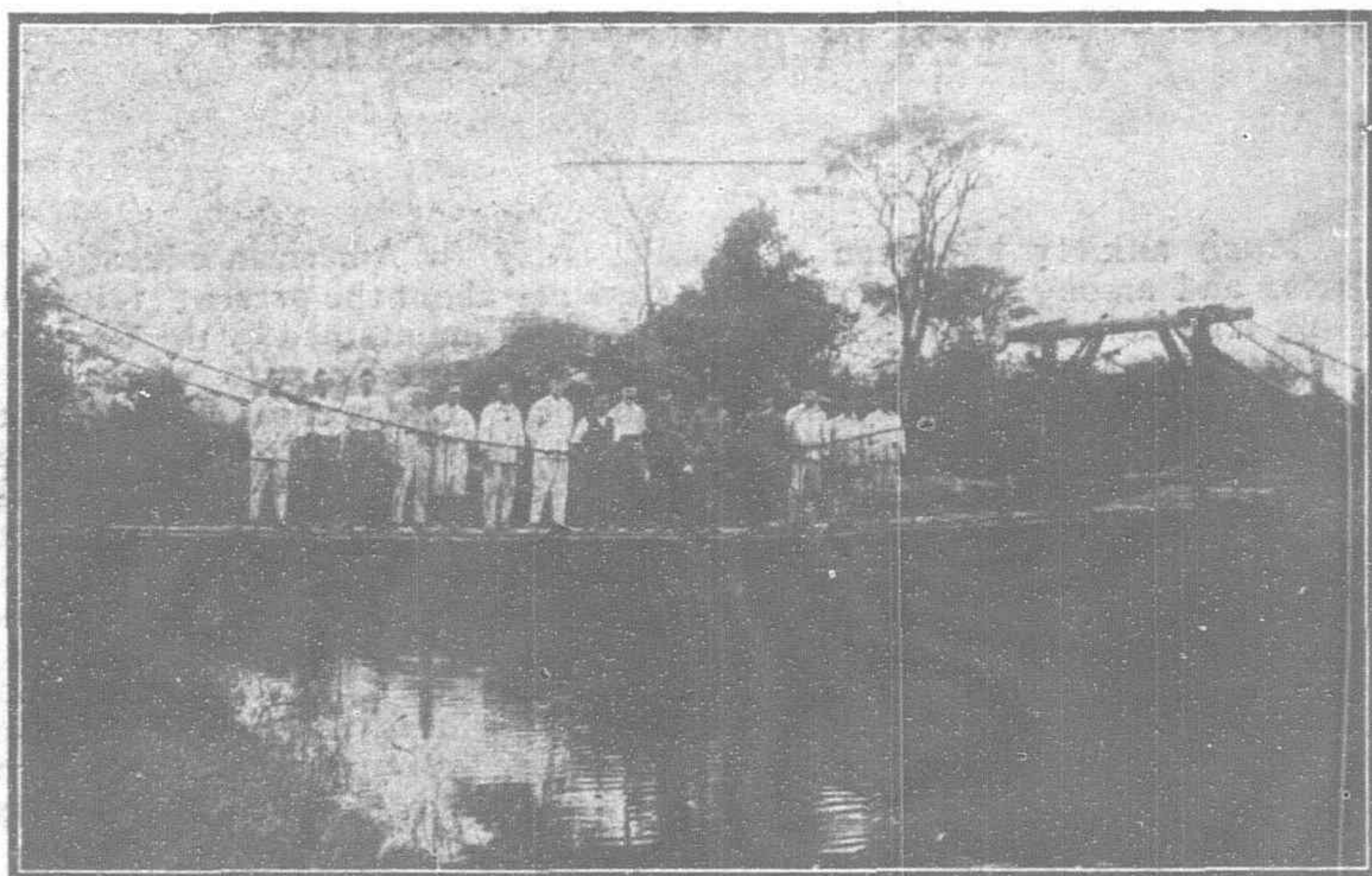


FIGURE 3. A COMPLETED SUSPENSION BRIDGE

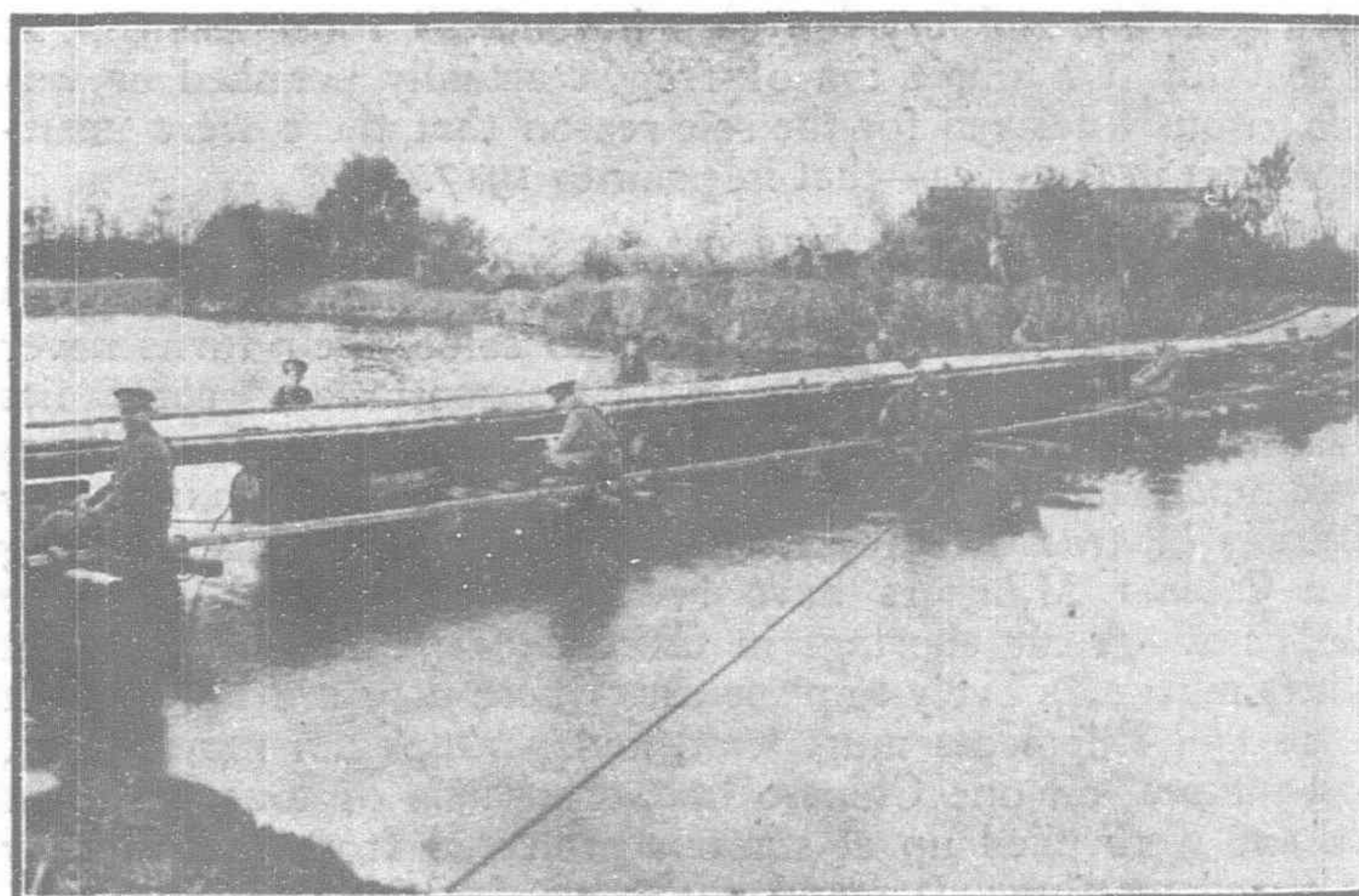


FIGURE 4. A FLOATING BRIDGE ON BARRELS

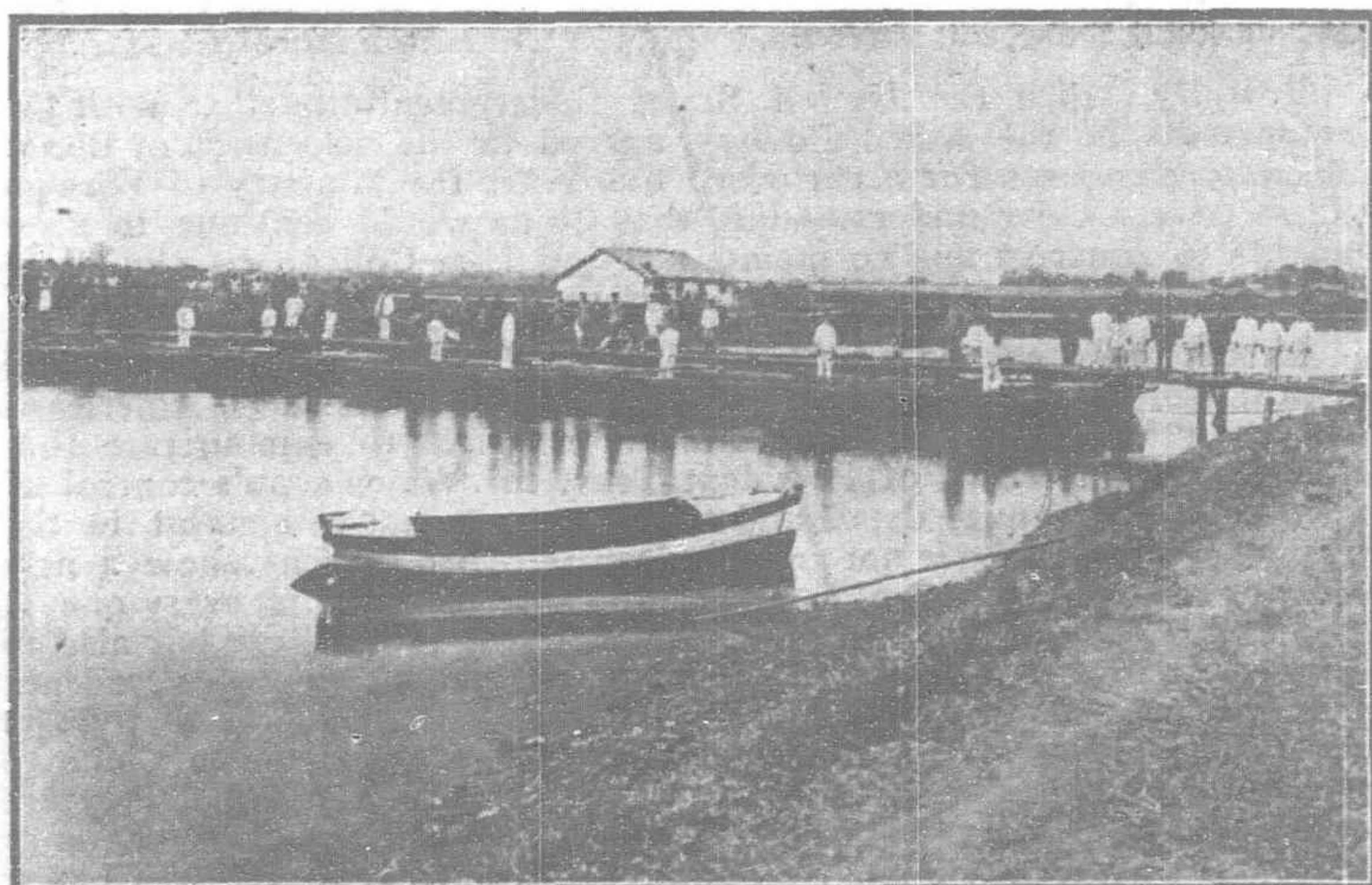


FIGURE 5. A BRIDGE OF CARGO BOATS



FIGURE 6. A RAFT

The Engineers, S. V. C.

A Body of Professional Men Who Have Trained Themselves to Be Very Efficient Military Engineers

The Shanghai Volunteer Corps is a body of volunteer soldiers recruited from the residents of Shanghai of all nationalities, who, by their devotion to their work and their proved efficiency under trying circumstances in the past, give the people of Shanghai, Chinese as well as foreigners, a sense of security which few other communities in China enjoy and which has not a little to do with the confident investment of the huge capital upon which Shanghai's important commerce is founded.

The Volunteer Corps includes cavalry, artillery, engineers, machine gun company, a maritime company, and infantry. The personnel of the various branches of the service is nonmilitary to begin with, but by carefully selecting the men who offer their services with an eye to their fitness for each particular line of work and by the most thorough training, the business and professional men of the port are converted into highly efficient and intelligent soldiers. One of the most interesting and most businesslike units in the corps is the company of engineers, into which are recruited men of practical experience in all branches of engineering. The membership of this company is between forty-five and fifty, and of these about ninety-five per cent are professional engineers, whose services in civil life command high salaries and who are in many cases devoted to important and highly specialized work. Their work, however, does not consist of drawing plans and discussing them. These men get out into the country and build bridges, construct and demolish fortifications of all sorts, experiment with high explosives, and school themselves in all manner of communication work. About ninety drills, besides meetings, are held each year and of these each member attends, on the average, sixty drills.

Forty-five men of this company recently gave a demonstration of the very practical work which they can do by building a boat bridge with a span of 150 feet across the Soochow Creek, over which infantry and artillery could pass, in an hour and a half. There are probably few bodies of military engineers which bring to bear upon such work as this as much technical knowledge and training as is represented by the personnel of the Shanghai engineers.

The officers of the company are Captain C. D. Pearson, Lieut. J. T. W. Brooke, and Lieut. R. C. Young.

Bridge Construction

This company appears less in the public eye than possibly any other unit in the Corps but it undoubtedly works as hard as any unit and carries out work which is instructive and useful and even more interesting than that of any other company in the Volunteers.

In 1909 Captain Godfrey raised the present company which has maintained a strength of about fifty since its formation. The great majority of the members are engineers by profession, though a few nontechnical men are admitted if they appear to be of the material required to make good sappers.

The work which the company carries out is essentially practical and includes communications, fortification, demolitions, and any work undertaken by a corps of army engineers. Considerable importance is attached to bridging and use of spans, as experience has proved that, although it is not likely that the

company will be called upon to construct large span bridges, this work trains all ranks in lashings and their use, the handling of heavy material, and especially develops the handiness required in any military engineering work.

Military bridges may be divided into three classes: Bridges without intermediate support, bridges provided with intermediate supports, and bridges resting on floating supports.

In the first class are included simple and trussed beams, frame bridges, of which the company has constructed the common types known as single or double locked (figure 1 shows two frames locked in position and a verticle trestle being hoisted), sling bridges (of which figure 2 is an example of a single sling bridge), and suspension bridges (one of which is shown in figure 3).

The most usual type of bridge in the second class is a trestle bridge and the Shanghai engineers have constructed this type at various times: it is the most useful for shallow creeks such as are met with round Shanghai.

The most spectacular type of bridge is probably the floating bridge, of which figures 4 and 5 are good examples; the first illustration shows a bridge constructed of barrel piers, the second a bridge of boat piers. The barrels obtainable locally in sufficient numbers being small, only 36 gallons, it has been necessary, it will be noted in figure 4, to construct piers of a double row of casks, and as will be appreciated, the small casks entail considerably more work than if hogsheads were available.

There are several methods of forming bridges with floating piers but in most cases it is simplest to

form two piers into a raft, as shown in figure 6; the roadway is formed on this raft and the stores required for the next bay laid on top; the rafts can be moved to the site and the bridge constructed by swinging, forming up, booming out, or directly from rafts.

In all bridges constructed a given load has been allowed for and all calculations carefully made; the considerable amount of work required in designing these bridges is increased by an unwritten rule that only material easily obtainable in Shanghai shall be used and also by the necessity of using existing stores, of which the supply is, of course, limited.

Since its formation the Maritime Company has assisted in all the heavy bridging work carried out by the corps as will be seen from several of our illustrations, and there are probably no two units in the corps which work together in the same way.

An interesting example of the company's way of tackling work was given at the assault at arms a year ago when a swinging derrick, as shown in fig. 7, was erected in fifteen minutes.

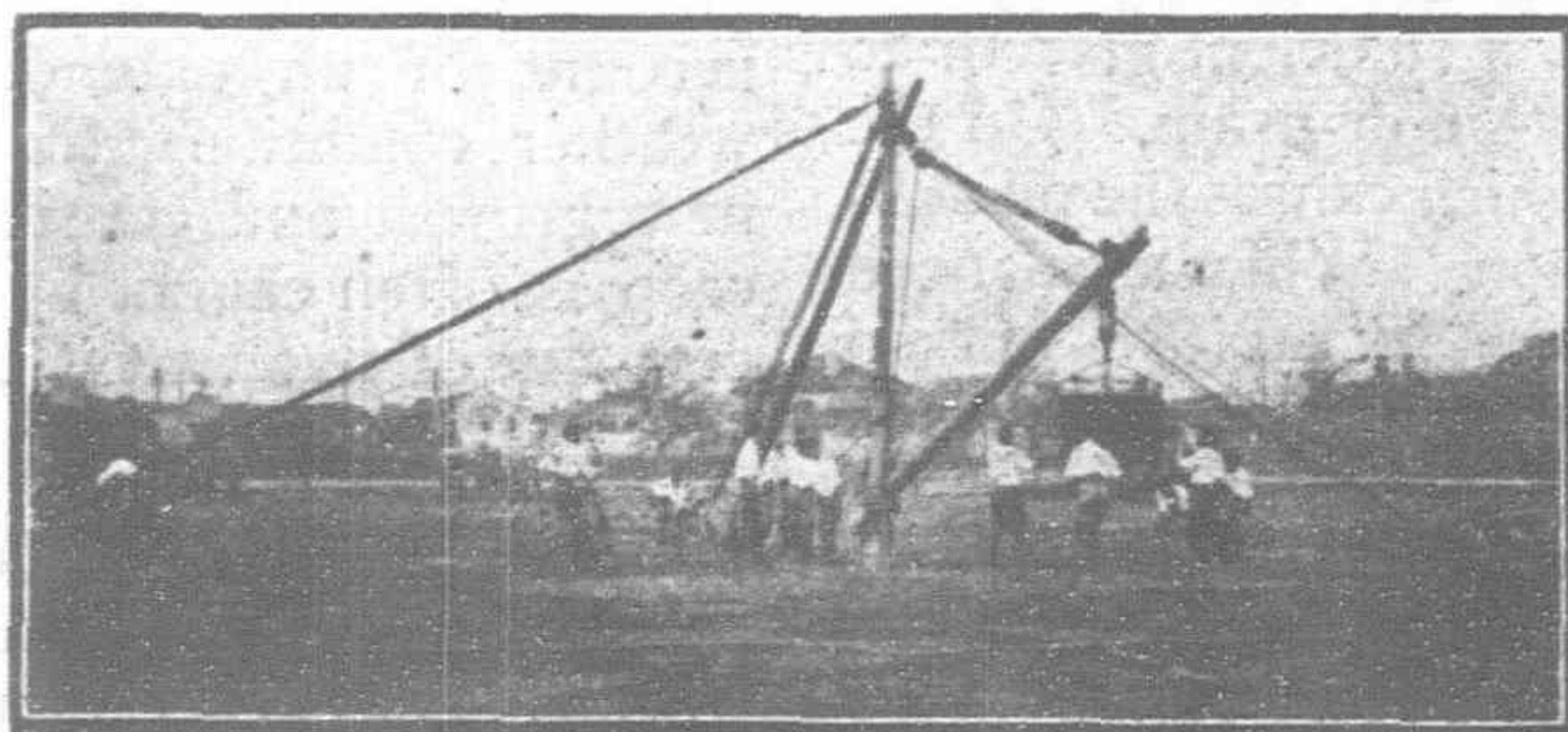


FIGURE 7. ERECTING A SWINGING DERRICK

Dairen's Trade Budget

March 26 the Dairen Chamber of Commerce held a general meeting and passed the supplementary estimates for the current fiscal year, the estimates for the next fiscal year amounting to Y.31,000, being Y.4,290 larger than this year's, a revision of the production of assessments, etc. Messrs. Tomono (of Masudaya), Oka (of Messrs. S. O. Tanaka and Co.), and Suitsu (of the Yokohama Specie Bank) were elected to the Committee, and M. Imuro (Superintendent of the Staple Produce Exchange) to the Special Committee.

Insects Affecting the Cotton Plant in China

Suggestions for Effecting Eradication

[By H. H. JOBSON, COTTON EXPERT TO THE CHINESE GOVERNMENT]

One of the greatest objections raised in regard to the introduction of American cotton into China is that insect pests attack it much more vigorously than they do the native plant. This is in part true, but not to such an extent as some statements would lead a person to believe. When a new variety or species of cotton is introduced into a locality for the first time, it is naturally watched very closely and oftentimes objectionable characteristics found which are overlooked on the native plant. However, the insect damage to cotton is sufficiently serious to demand the earnest consideration of those interested in the trade, not only from the standpoint of foreign cotton, but on account of the damage to the native plant as well.

The greater susceptibility of American cotton is due to a great extent to the changed conditions under which it is grown. The excessive rainfall, which occurs during the growing season, together with the type of fertilizers in general use, causes the plant to grow very rapidly, thereby causing the foliage to be very tender and more susceptible to the attack of insects. Such fertilizers as night soil, barnyard manure, and bean cake contain a very high percentage of nitrogen and a low percentage of phosphoric acid. Nitrogen is very necessary for truck crops, or such plants as are grown for their foliage, because the foliage will not be tender enough to be edible unless it grows very rapidly. Enough nitrogen to cause the plant to make a sufficient growth to bear a maximum yield is desirable for cotton or grain. On the other hand, phosphoric acid, the plant food which causes the plant to put on fruit, is even more desirable for cotton. When a balanced fertilizer is applied the plants do not grow so rapidly, put on more fruit, and are less liable to insect injury. When a cotton plant grows too rapidly it is not only very tender and more susceptible to insect injury, but also furnishes more shade, a condition which is conducive to the propagation of insects.

There are a number of species of insects to be found in the cotton fields of China. Some of them cause very little injury, others may cause considerable damage occasionally, while there is only one present that causes a maximum amount of damage. Insects that have been heard of, or that have come under the observation of the writer, are as follow:

The Purple Boll Worm (*Earias Favia*) is found throughout the Yangtze region, but is not present in very large numbers. It does so little damage that it does not deserve much consideration.

The Cut Worm did not come under the observation of the writer, but from descriptions given by those who have seen it and its work, there is no doubt but that it is one of the three more common species of Cut Worms, i.e. the Greasy Cut Worm (*Agrostis ypsilon*, Rott.), the Shagreened Cut Worm (*Feltia malefida*, Guen.), or the Variegated Cut Worm (*Peridroma saucia*, Hbn.). This insect operates in the spring, cutting the young plants off either just above the surface of the ground, or just below the bud. From the descriptions given, it is impossible to determine which of the above three species has been most active in the fields of China. It can be controlled very easily. When cotton is planted in such small fields as those cultivated by the Chinese farmers, the individual worms may be destroyed. They usually work at night or very early in the morning, and when they finish feeding on the young plant they nearly always burrow into the soil at the base of the plant. By going over the field and digging an inch or so around the base of each cotton stalk that has been injured the worms may be found and destroyed.

This is not an expensive operation as it has often been carried out on experiment stations in America where cotton followed some grass crop which permitted the worms to propagate freely, and where labor is much more expensive than

it is in China. The most economical method of controlling them is to keep the cotton fields free from weeds and grass. They propagate most freely in weeds and grass and will be found most numerous in the spring where the growth of grass and weeds was rankest the preceding autumn. Where fields are properly cultivated and all vegetation except the crop grown kept down, there will be no serious complaint from this insect the ensuing spring.

The Cotton Worm (*Aletia argillacea*), generally known among the American cotton farmers as the Cotton Leaf or Web Worm, has been more active on American varieties the past season than it has on the native plant. It feeds on the foliage, quite often completely stripping the plant of leaves, but does not injure the fruit or bolls other than to stop the supply of plant food which is manufactured in the leaves. Although it has been present in the cotton fields of America for many years, it is not considered a very great pest, because it usually appears so late in the season that only a minimum damage results. In average seasons all bolls that will open before frost falls are far enough advanced to open in spite of them, unless they appear very early. The greatest damage occurs in seasons that are favorable for a "top crop." The top crop is that which is produced when, after the plants have stopped putting on fruit on account of an extended drought or some other unfavorable weather conditions, the autumn rains cause the plants to put on a new growth and consequently a late crop of fruit. This late crop is often caught by the frost, and it is not more than one top crop out of five that is of economic value.

If the Web Worm appears early enough in the season and in sufficient numbers to do material damage it may be controlled by a simple and inexpensive application of Paris Green or London Purple. The cheapest and simplest method of application is to place the poison in two bags, which are suspended from the ends of a pole. The material from which the bags are made should be coarse enough to permit the poison to sift slowly through when agitated. The operator then either walks through the field with the pole across his shoulders, each bag being suspended over a row of cotton, or he may ride an animal in a trot which will shake the bags sufficiently to cause the poison to sift slowly through. If necessary to cut down expense the Paris Green or London Purple may be mixed with one or two parts flour, or some other very finely pulverized substance that will not injure the cotton plants.

The Cotton Boll Worm (*Heliothis armiger*, Hubn.) has caused considerable loss to the cotton farmers the past season. This insect is also known as the Corn Ear Worm and the Tomato Worm. It attacks Indian corn by getting inside the husk and feeding on the tip end of the ear while it is young and tender. When attacking the tomato, it eats through the skin of the fruit, usually from the blossom end. Under ordinary conditions it does not do a great deal of damage. However, there are certain conditions which are favorable for its propagation, under which it may cause serious loss. It usually does most damage during wet seasons when the excessive rainfall causes the plants to make a very rank growth and to produce a great deal of foliage which furnishes plenty of shade for its propagation. When the plants are far enough apart for the sun's rays to penetrate throughout the plant it cannot propagate fast enough to do serious damage. Close planting, such as is practiced by the Chinese farmers, together with the excessive rainfall during the growing season furnishes almost ideal conditions for the Boll Worm, consequently a considerable loss is experienced by the Chinese cotton farmers on account of it. It is present throughout the cotton growing zone of America, but no serious effort other than adjusting the seeding

rate or methods of tillage is made to combat it. It does not become a serious menace other than in restricted districts once in every six or eight years.

The Pink Boll Worm (*Pectinophera gossypiella*, Saund.) is the insect which is to be most feared in the cotton fields of China, from the fact that it is most difficult to combat. It is present throughout the Yangtze district and under normal conditions will destroy from twenty to sixty per cent of the cotton crop. While at Tungchow a careful search was made both on the American and native varieties for the Pink Worm, and while a number were found on American plants, none were found on the native plants. Facilities necessary for a careful examination were not available, consequently the only infestation that could be distinguished was where the worms had left one boll and attacked another, in which case they were easily detected by the hole through which they entered the boll. The fact that none were found on the native plants led to the belief that they attacked the American varieties much more vigorously than they did the native. This belief was dispelled, however, when a visit was made to the seed rooms of the larger ginneries in Shanghai. Upon examination of the native seed a very large percentage of them were found to be infested, and large numbers of the insects could be found that had eaten their way out of the seed after reaching the seed room and were crawling around over the floor and walls of the room. Although it may be more difficult to detect at work on the native plant than it is on American cotton it is present in the native fields in sufficient numbers to do great damage.

The life history of the Pink Boll Worm is such that it is one of the most difficult insects in existence to combat. It has been recently introduced into a few localities of Texas by oil mills that imported cotton seed from the infested regions of Mexico for crushing purposes. Both the State and Federal Governments are making a determined effort to destroy it before it spreads farther. The methods used are very drastic, for when it is found in a field, the field is condemned, and every stalk, boll, and lock of cotton is carefully collected and burned.

The reason of its being so difficult to combat is that it spends the greater part of its life history inside of the seed and boll. The small eggs which are laid by the moth are very difficult to detect without the aid of a lens. They are laid singly or in groups either on the flower or green boll, more commonly on the boll. The number of eggs laid by each female moth is difficult to ascertain, but it is generally conceded that they are capable of laying more than one hundred. The egg hatches in from four to twelve days after it is laid. The larva, which is very small at first, tunnels into the boll under the egg shell or nearby and feeds on the soft inner walls or equally soft partitions separating the divisions of the boll. It then tunnels to the base of the boll and attacks the lower seed, feeding on the seed from the base of the boll toward the point or tip, until it becomes a full grown larva. The larva, or worm, sometimes leaves one boll and attacks another, in which case it can be readily detected by the hole through which it entered the boll. The larva eats the seeds and tunnels and soils the lint, causing the rotting or premature opening of the boll. One larva within a boll will not ordinarily discolor all the lint produced by the boll, but when several are present in the same boll all the lint may be made useless. It is an exclusive inside feeder and does not attack any other part of the plant. The larva stage from the hatching of the egg until the spinning of the cocoon requires from twenty to thirty days during warm weather, but the time is much extended in cold weather, as it usually winters in the seed. It usually spins its cocoon and pupates within the boll. Before finishing the cocoon, however, it gnaws a round hole through the outer wall of the boll in order to insure an exit for the issuing moth. The pupal period lasts from ten to twenty days. The moth after issuing from the cocoon is small, inconspicuous, sluggish, and rarely seen, because it hides during the day, mostly on the ground, under stones or brush, sometimes actually burrowing into the surface of the soil in order to find shade. The time of flight is from 6:30 to 8 P.M. but, though the moths have strong enough wings for a comparatively long flight, they only fly to the nearest bolls for copulation and egg laying, which under normal conditions takes place soon after issuing from the cocoon. The fact that the moth does not fly to great distances furnishes

the greatest opening for its destruction, for if the crop is destroyed as soon as a field is found infested the moths that escape seldom fly as far as another field. They die soon after oviposition. Under very favorable conditions, in a cool place, with water available, some moths will live for thirty days, but the majority die even under the most favorable conditions in from fourteen to twenty days. The entire life, from the laying of the egg to the next egg laying, may be accomplished in thirty-five days, but the average length of time required during the summer months or cotton growing season is from forty to fifty days.

As the Pink Worm is more generally spread through the seed, it is possible to eradicate it, but the steps necessary are so radical that there is little hope of the Government's taking hold of the problem in a sufficiently vigorous manner to make much progress towards its destruction. The first step that the Government might take would be to make a survey of the entire cotton growing zone of the country, and should there be localities found where it is not present, vigorous efforts could be made to prevent it from spreading into those localities.

A number of statements have been heard that the Mexican Cotton Boll Weevil is present in the cotton fields of China, but although a careful search was made for it in the Yangtze region no evidence of its presence could be found. There are many different species of weevils that may easily be mistaken for the Boll Weevil, as it is impossible to distinguish it from these other species without a microscopical examination. The Boll Weevil has a small hairlike projection from each of the front legs, which is the only characteristic that distinguishes it from more than thirty species of weevils. These hairlike projections are so small that they cannot be distinguished without the aid of a lens.

There is little likelihood that the Boll Weevil has been introduced into China up to the present time. However, there is danger of its being brought in with every lot of American seed introduced, if the Government does not take steps to establish a quarantine against American seed, and permit none to come into the country without being carefully fumigated in the presence of some man who is fully capable of performing that kind of work. It would not cost the country much to establish a quarantine, and if it is not established there is little doubt that the weevil will eventually find its way into China. After it has once got a start, it is practically impossible to destroy it, or even keep it under control with conditions such as they are; and as sure as it is introduced, just so sure is the cotton industry of the country to suffer millions of dollars in losses.

Lungchow Road Plans

By the repair of a short stretch of mountain highway a great improvement in transportation facilities on the Tonkin border is soon to be effected. The communication by road between Lungchow in western Kwangsi and the frontier of Indo-China at Namkwan the so-called *porte de Chine*, from the border to a village called Yashuitan on the Sungchi River some fourteen miles from Lungchow, is in very fair condition in fine weather. It is to be improved on the Yashuitan to Lungchow section, at present running in places over rather mountainous country. This road will link up Lungchow and the road system of Indo-China at Langson. Repairs were in hand at the outbreak of the Canton troubles but were then dropped. At it is, the first mentioned, section of the road is such as admits of driving a buggy and pony semi-foreign traps with ponies running whenever occasion offers, and with very little trouble it could be made passable for a light motor car. The officials are fully alive to the advantages likely to result from having good road communication with the frontier and also to the possibilities of motor traffic. Three motor cars already have passed over the road, successfully reaching Yashuitan from Langson in three and a half hours, but the shortage of money is the present, and ever present difficulty.

The Liuhokow Colliery, Honan

The Liuhokow Mine is located at Anyanghsien in Honan province, about twenty-two miles northwest of the city. It is accessible to Taining and Lintsing by the Changho, while connection is established with the Ching-Han (Peking-Hankow) line at Fenglê by a light railway, the distance being about thirteen miles. The distance to Peking is three hundred and six miles, and to Hankow four hundred and forty-five.

In the twentieth year of Kwanghsu, an application was made by a certain Anyang resident named Ma Ki-lin and Tang Shih-chen, a resident of Wei Hsien, to the Governor of Shansi for the right to mine the district. The right having been secured, they organized a small company with a capital of 20,000 dollars. They then set out to build a light railway and sink a shaft. But after having spent over 60,000 taels, they found the work far from being in a satisfactory condition. So, in the thirty-first year, the promoters succeeded in interesting four others—Chang Hsiao-chien, Hsun Chung-hsiang, Wu Yuh, and Ku Ai—to put up 20,000 taels each. During the following year, they raised a further 100,000 taels by means of shares, and borrowed another 100,000 taels from a German source.

Provided in this way with ample working capital, the company was able to carry out the development of the mine in a much more creditable manner. Later, the concern was incorporated into a limited company with a capital totaling Tls. 340,000 under the name of the Liuhokow Mining Co., Ltd. Mr. Yeh Jun-han was appointed the superintendent of the company; Messrs. Ma Ki-lin, Tang Shih-chen, Chang Hsiao-chien, Wu Yueh, and Ku Ai, the directors; and Tang Hao-chen and Wang Kun, auditors.

Yeh did his best to get the mine fully developed, but things did not progress favorably, with the result that by the first year of Emperor Hsuantung, the company's account was found to be short by Tls. 57,000. Yeh had to resign, and was succeeded by Ku Ai. The change, however, did not improve conditions. In the third year of Hsuantung, Wu Yueh relieved Ku. About this time, the period for the amortization of the German loan fell due, but money being scarce, it was impossible to meet the payment. Under the advice of Mr. C. von Hanneken, who was engaged by the administration as its adviser, the loan was taken over by the Belgian Bank, and the German debt was paid off. But the new creditor, in lieu of the favor given, demanded and obtained the sole right of selling the coal output for ten years and the management of the concern, as well. Thus, the full right of controlling the mine fell into the hands of the Belgians, and as might be imagined the business result began to improve steadily.

Quantity and Quality of Coal

The area of the mine lot measures ten square miles, and is said to border on the Tzuchow mine field. The latter colliery is located on the northern bank of the Changho, opposite Liuhokow. This was opened by Mr. Yeh Jun-han and is worked under the management of a company called Taichai Mining Administration. The area is only one square mile, but the seams are very thick, the fifth seam being estimated to measure eighteen feet in thickness by a German expert.

The following is given out as the thickness of various seams of the Liuhokow Mine:

The 1st Seam	..	..	..	about 2 ft.
The 2d	..	..	..	" 12½ "
The 3d	..	..	..	" 8 "
The 4th	..	..	..	" 4 "
The 5th	..	..	..	" 3 "
The 6th	..	..	..	" 7½ "

At present, the second and third seams are mainly excavated, whilst the seams below the fourth are under exploration.

As regards the volume of the coal deposit, a certain German engineer opines that if one million tons of coal be worked out a year it would take one hundred years to exhaust the supply. The coal is bituminous, shiny black in color, and is fit for the manufacture of coke. The analysis of the coal is as follows:

	Volatile Substance	Carbon	Ash	Humidity	Sulphur	Heating Power
Coal ..	19.82	67.63	11.44	1.11	0.65	7.502
Coke ..	1.50	80.30	17.61	0.59	0.50	

Shafts and Output

There are five shafts in operation, of which three are in workable condition, the rest being flooded.

Colliery	Diameter	Depth
1. Chuansheng	6 ft.	150 ft.
2. Hoshun	8½ "	240 "
3. "	6½ "	flooded
4. Chuanhsi		170 ft. (flooded)
5. Chuanta	8 "	220 ft.

As the shafts reach only the second and third seams, the amount of coal mined does not reach five-six hundred tons a day. At present, a shaft is being sunk at the east of the Chuanhsi Colliery. Its diameter is eight meters, and when completed it will measure one hundred and twenty-five meters in depth and penetrate into the sixth seams. Output from this shaft alone is expected to reach fifteen hundred tons a day. The amount of water to be pumped out from the mines is very little, two hundred and fifty to three hundred and fifty cubic feet being the quantity to be daily thrown out. The nature of the ground being very hard, mine props are not needed, and moreover as there is no gas in the mine, the excavation can be carried out with very little trouble.

Price and Sales

When all the expenses for mining the coal are considered, the output is worth about \$1.20 per ton at the pit, but it is calculated at \$1.70 to \$2.00 and sent to Fenglechen to be sold at the undermentioned prices:

Coke	\$8.00
Lump Coal	5.00
Unscreened	3.50
Dust	2.50

The cost of transportation from the mines to Fenglechen comes from ten to twelve cents per ton, where loading on trucks on the Ching-Han Railway is done under contract at the rate of eight hundred cash per car for lump and six hundred cash for unscreened coal. The freight to Hankow by the railway is \$5.30 a ton.

From the mines to Fenglechen, the coal is carried by a light railway using a train made up of eight trucks, each having the loading capacity of five tons, a day's trip being limited to ten.

It being possible to increase the output to 2,000 tons a day when the new shaft is completed, if new machinery be bought to sink it speedily, the Company is seriously thinking of investing 56,000 dollars for the purpose. The improvement of the light railway is also being considered with a view to enhancing the carrying power, as well as directly connecting the cars with the Ching-Han line. The present scale of charges made by the latter for the hauling of coal being rather too high, and consequently preventing the company from competing with the Lincheng and Chinghsing product, negotiations are under way with the railway authorities to grant better terms. When this favor is granted, the Company hopes to market its coal at Hankow, Kaifeng, and Leyang in the south, and Peking, Paoting, and Tientsin in the north in close competition with its rivals.—China Advertiser.

Editorial Comment

THE FAR EASTERN REVIEW

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COMMERCE

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The New Departure in Banditry

For a good many years China has been a very comfortable field for the adventurer. It has been possible for lone and unguarded travelers to go wandering off into the interior, thousands of miles from railways, and to return telling of all manner of strange sights, peoples, and customs without having a single thrilling escape to narrate. One has had to strain the imagination to give an account of a long journey into the interior the color which every eager auditor insisted upon. Just the other day a railway train running through the populous provinces of Honan and Kiangsu, between Kaifengfu and Hsuehowfu, was held up by bandits and a number of passengers, including Europeans and Japanese, were robbed while quite a few Chinese were wounded. That is how things have changed.

The last two or three months have brought forth the richest crop of offenses against the persons of foreigners resident in China that has been recorded for many years. First of all came the firing upon foreign steamers, both merchant and war vessels, on the Yangtze, which resulted in the death of several Europeans. Then came the kidnaping of Engineers Kyle and Purcell in Honan by a large party of bold rovers who carried them into the mountains together with a number of Chinese whom they were holding, and demanded a ransom of arms, ammunition, and appointments in the Chinese army.

An Anglican missionary was recently murdered by pirates in Fukien.

Two ladies, Mrs. Dixon and Mrs. Catherine, missionaries in the interior, were taken by bandits on the Shantung-Kiangsu border and held for a ransom. A determined Chinese magistrate effected their release by hounding the village elders of the district.

An agent of the British-American Tobacco Company in Shantung, a Mr. Love, was also taken by bandits of a less vigilant order, from whom he escaped in a few days.

A missionary, a lady, was recently murdered in western Shensi.

The adventures of Kyle and Purcell of the Siems, Carey Railway and Canal Company, have been of a particularly spectacular character and need no coloring in the telling. Neither Sicily nor the Balkans could have produced anything better. With a party of Chinese engineers and a following of cooks, servants, cartmen, and soldiers from both Peking and the local garrisons, Kyle and Purcell were surrounded and seized in the village of Chang Pa Chuang, near Wuyanghsien, in the district of Yencheng, Honan province, March 4, and after those of the soldiers who did not escape in the panic had been overpowered, the foreigners were carried off into the mountains; since then

Chief Engineer Kyle has been hustled from valley to valley and peak to peak under his bandit guard, who were exceedingly busy eluding the soldiery sent out from many district garrisons to rescue the foreigners. In a skirmish between soldiers, which took place March 25, Purcell, with a good-natured bandit and a Chinese engineer named Wu, evaded the main party and escaped to the garrison town of Yehsien, subsequently being escorted from city to city as far as the railway. Chief Engineer Kyle was held by the bandits and as they threatened to kill him if any attempt was made to rescue him by force, and were forcing to lead their life, which was by no means an easy or a sanitary one and must have been a severe strain upon a man who is over sixty years of age, his friends were greatly worried about his position.

This trick of taking foreigners and holding them for ransom is an innovation in China and a very unwelcome one. The person of the foreigner, thanks to an official system which makes every government officer, no matter how small, responsible for the crimes committed in his district to those above him in an ascending scale that reaches to Peking, and thanks to Peking's solicitude for the safety and comfort of foreigners, has heretofore been almost sacred in the interior, and until recently it was possible for an unarmed foreigner to travel quietly through bandit-ridden country, carrying whatever wealth he liked, passing armed bands on the roads and rivers, hobnobbing with the enemies of the state if he felt so inclined, without having to give any thought to his safety. These days are evidently passing, and their passing is pretty good evidence also that the sense of responsibility which has held China together for all these centuries, more than any other force, is also passing.

This is a bad sign, and eager as every one is to see China achieve a workable democracy, the loss of a sense of responsibility and the loss of respect for authority, have to be traced to the introduction of "liberal" institutions. This word "liberal" in Chinese is an expression which the Chinese translator who has not yet learned to choose his words insists upon translating "as you please," or "on your own," and as this is also the interpretation which the official classes in China put upon the expression by example, it is small wonder that the common people have come to interpret the new liberty which they are told is theirs as license, and the liberal institutions which the reformers are preaching, as "on-your-own" institutions. Under the old régime the people got plenty of repression and very little service in return for their taxes. Now they get neither, but find themselves paying for the privilege of watching their betters play politics and support their political aspirations with bandit armies. If the big men can arm coolies and march them up and down the landscape in the campaign for jobs with perfect impunity, it is naturally suggested that the little men can also arm coolies and march them up and down the landscape in a campaign for whatever is worth taking. The big men appear to be responsible to no one. They have adapted

themselves to these glorious new "on-your-own" institutions. So since the big ones have broken the chain of responsibilities, that once reached from Peking into the most remote ravines of the western mountains and the last waterhole of the northern deserts, the little ones can do no more than follow suit. This explains the new departure in banditry.

Old Ships for New Steel

It has taken a good many months of bartering and diplomatic persuasion to secure an amount of shipping from Japan for the service of the Allies on the Atlantic equivalent to Great Britain's monthly losses of steamers last year; but the exchange of American steel for Japanese ships is now definitely arranged and some of the ships which are to carry men, provisions, and munitions from America to Europe are already on their way, others are building, and still others are to be built with the American steel involved in the exchange contract.

It has been impressed upon every people under the sun that an Allied victory depends in a great measure upon the Allies' ability to keep sea communications open. This the Japanese Government undoubtedly appreciates, and there is every reason to believe that the Government has been more than willing to contribute as much as possible. It is estimated that the present arrangement, by which the Government pays the difference between the Allies' charter rate and the present prevailing rate of tonnage will cost the Japanese treasury about eighteen million yen. But shippers have not been so willing to make sacrifices. The war has not been brought home to Japan with quite the same force as it has to the peoples who live by bread tickets and scan the casualty lists for the names of their friends and kin, so the Japanese business man is still a business man, and the Oriental shipowner is still the Oriental barterer, delighting in the prolongation of a deal and arguing out each little detail with a finesse, and at the same time a relish, which are both foreign to the Occidental. This probably has had much to do with the time that has been wasted in coming to an understanding.

When Viscount Ishii was in America Japan's plea for an allowance of steel for shipbuilding purposes was presented; but America had a big program of shipbuilding on her own account ahead of her and many other urgent needs for steel, so the Washington officials were hard-headed and insisted upon having ships in return for steel, if any steel was to cross the Pacific. The details of the subsequent bargaining are not interesting. According to the final arrangement 514,000 tons of Japanese shipping are to be placed at the disposal of the Allies and America. Of this total 234,000 tons have still to be constructed in the Japanese yards. The Japanese Government has chartered from its own shipowners 150,000 tons at prevailing rates, which will be turned over to the Allies at once at the inter-Allied charter rates. Between May and December the shipowners will deliver, under charter to the United States Shipping Board, 130,000 tons of shipping, in exchange for which one ton of steel will be released for one ton of shipping. The shipowners further agree to build and deliver, in 1919, 234,000 tons of shipping for which steel will be released in the ratio of one ton of steel to two tons of shipping. The charterers are responsible for the armament of the vessels, while the Japanese firms agree to supply officers and crews. According to the *Japan Advertiser* of April 17, the following are the vessels which are to be placed at the disposal of America in the immediate future:

N. Y. K.: Tottori Maru, 9,960 tons; Ceylon Maru, 6,440 tons; Kichirin Maru, 5,500 tons; Tosa Maru, 7,600 tons; Penang Maru, 8,200 tons; Jinsen Maru, 5,500 tons; Rangoon Maru, 8,000 tons; and two others.

O. S. K.: Indo Maru, 7,900 tons; Java Maru, 7,900 tons; Malay Maru, 7,900 tons.

T. K. K.: Seiyo Maru, 10,300 tons; Persia Maru, 4,750 tons.

Mitsui Bussan: Komakata Maru, 4,320 tons; Otaru No. 2, 4,000 tons.

Tatsuma: Ataka Maru, 5,800 tons.

Katsuda: Ide Maru, 6,600 tons.

Uchida: Aikoku Maru, 4,720 tons.

Department of Communications: Rashu Maru, 6,100 tons.

Kishimoto: Shinsei Maru, 6,800 tons; Mewo Maru, 4,000 tons.

Since the conclusion of the deal one very demonstrative fly has been discovered in the ointment. If the war were not so serious it would be rather amusing. Four of the steamers which were to have been turned over to the American Shipping Board were condemned as useless hardware by the four skippers who command them, and who may therefore be credited with a knowledge of them, when they were called upon to steam away to the Atlantic. The officers refused to go. According to these officers the vessels offered were all old boats, and the four which they were to take were particularly unfit. They were anywhere from 10 to 37 years old, said the commanders. They could not possibly outrun a submarine and if a gun were fired from the deck of any one of them, the shock would sink the ship. The canny shippers were also taking into account the fact that the boats were heavily insured and that it would pay the owners to sink them. For these various reasons extensive publicity has been given to the decrepit character of boats offered, and the N. Y. K. in the face of comment has decided to make some substitutions. Here again the Oriental zest for putting through a good deal seems to have got the better of a few shipowners' devotion to the Allied cause.

The Perplexing Chinese

The business of explaining the Chinese is one that is invariably attempted by every one who visits China for however long or short a period, and it has been undertaken by a great many who have never visited China at all. This would imply that the Chinese need a good deal of explaining and the implication is just. The man who decides after long residence in China that the Chinese are precisely like the other peoples of the earth has simply been salted by the great sea and, having come to think and act as a Chinese, assumes that the race and nation from which he sprang think and act as the Chinese do. It takes an astute outsider, with a knack of keen observation to point out the differences between the Chinese and other peoples and such observations are really valuable. They are of real benefit to the business man, the missionary, and the diplomat in the Orient in their dealings with a race which has developed through three or four thousand years a singularly independent code of morals and prejudices. The latest contributor of really astute comment upon the Chinese character is Mr. Tokutomi, editor of the daily newspaper *Kokumin*, who was recently in Peking and who has now returned to Japan to express his views upon China in the columns of his paper.

Mr. Tokutomi speaks of one marked peculiarity of the Chinese mind as the "duality of the Chinese." A happier and more scientific description might be found, but in his comments the writer makes the meaning of the expression, as he uses it, clear enough and the foreign resident in China will hail his conclusions as exceedingly just and truthful.

"The duality of the Chinese," says Mr. Tokutomi, "has become a sort of national characteristic by practice of centuries. The Chinese draw a distinct line of demarcation between precept and practice, which they consider as far apart as the poles. And therefore the Chinese pay no attention whatever to an act of their compatriots that runs counter to their precepts. Other peoples fret and worry to make their practice conform to their ideals." He further declares that the Chinese can be absolved from hypocrisy, because a hypocrite must needs be conscious of his "duality"; that is, his actions must deliberately and consciously

be made to belie his expressed precepts with intent to deceive, which is not attempted by the Chinese, because they understand each other and could not hope to deceive one another.

This peculiarity of the Chinese is worth understanding. Their seeming hypocrisy arouses great wrath and indignation in every foreigner who has to deal with them. No one can talk so eloquently and so convincingly on abstract ethics as a Chinese, and no one can so light-heartedly violate the principles which, he announces, are the "foundation of the social order," as the Chinese. The classics are full of the highest moral maxims and every one of education learns the classics by heart and acquires a huge stock of well-turned phrases which sound so much like those in the Occidental's copy book that they make an immediate appeal to the sympathetic European. Shop signs are often painted over with virtuous sayings, official documents and correspondence abound in them, and any one lecturing the Chinese on ethical topics will be delighted to hear them agree enthusiastically with all that is said and improve upon his own expressions in response. The deliberate and callous fashion in which the eloquent Chinese lecturer on ethics will violate his creed, and the cool way in which he takes a reminder of such a violation leaves the Occidental speechless. He brands the culprit as the most rascally hypocrite he has ever met and heartily condemns the whole Chinese race.

The truth of the matter is that the study of ethics in China is an abstract science, a mental exercise, and also an art when the expression of moral precepts takes literary form, and may be studied as either a science or an art without putting the student under any obligations to adapt the practical conduct of his business affairs to the precepts which he learns from books or creates for the delectation of others. The discussion of public and private morality is a polite accomplishment in China, just as playing the piano is with us. If a student of the pianoforte interprets a hymn of praise upon his instrument in a convincing manner we are not necessarily convinced of his piety or the righteousness of his life. By the same token if one Chinese says to another with a tone of sincerity that "honesty is the best policy," the auditor does not relax his vigilance in conducting a business transaction with the moralist. A Chinese official who becomes friendly with you takes a scroll and writes upon it with great care and in very beautiful characters "the strength of a nation is founded upon the righteous conduct of its people," which he then presents to you with pleasing grace and politeness. The next day you hear that immediately after writing your scroll he settled a long pending law suit by discharging a guilty person who was able to pay him a larger bribe than he had already accepted from the plaintiff. The Occidental, who, as Mr. Tokutomi says, frets and worries throughout his life trying to make his practice conform to his precepts, turns cold after such an experience. The Chinese take it as a matter of course. They would admire the scroll and the precept as artistic products but they would no more judge the man who produced them by these creations than we would judge a painter's character by the expressions worn by the figures in one of his paintings. This of course does not mean that the Chinese have no principles which bind them and no doctrines in which they are sincere, for Chinese Society is firmly rooted in an elaborate and rigid code of public and private morals, but it does mean that the character and purpose of no Chinese must ever be judged by his facility in the polite Chinese accomplishment of voicing or writing pious platitudes.

The knowledge of a few such points as these is useful in business in the Far East. There are many foreigners in China who worry through a lifetime of tribulations because they cannot or will not understand the Chinese. Mr. Tokutomi is to be congratulated upon having got well under the surface during his short visit.

Commercial Preparedness

The preceding dissertation on Mr. Tokutomi's philosophy may read like a very useless generalization having no practical bearing on anything in particular, but it is simply the text from

which a practical moral can be drawn. It is axiomatic in the commercial world that a knowledge of the market is essential to successful marketing. You cannot sell heating plants to the Malays or ice plants to the Eskimos. You cannot sell canned pork in Mecca or canned beef to the Hindu. The average American exporter, whose previous experience has been limited to shipping his goods from Jonesville to Brownsville, in the same latitude and the same grain belt, refuses to believe any of these things, however, until he has tried them, and his ventures into a foreign field usually convince him that there is nothing in the export business and that, since he got none of the heathen's money, the heathen has no money to spend.

Some very wealthy firms, which have established themselves in a market, find that they can educate taste and make it pay, but in the beginning of things it usually pays to meet the needs, tastes, and whims of a foreign market more than half way. Prior to this war the traders of nearly every nation in China, with the exception of the Germans and the Japanese, refused to acknowledge that the Chinese had any right to special needs or special tastes. They refused to recognize, too, that the Chinese might prefer to do business with people who were willing to do business in the Chinese way, and who were willing to conform in some degree to business methods and traditions, not to mention native customs, which have taken pretty definite form in the last three thousand years. A fine aloofness was the correct Anglo-Saxon business attitude and if any one had suggested that the Anglo-Saxon traders learn something about what the Chinese thought and what they wanted, so as to adapt both merchandise and methods to local needs and preferences, they would have considered it an absurd impertinence. The study of the Chinese people, language, and market was left to the missionaries, the Japanese, and the Germans, none of whom had any caste or dignity to lose. The result is that Philadelphia's trade with Camden is probably bigger than America's annual trade with China, that there are some thousands of individual firms in America with a bigger annual turnover than the total value of American imports into China and that America's trade with the minor Balkan states, which are busy in peace times exporting their underfed humanity, is greater than her trade with China's four hundred millions. Another result is that the Japanese, with less than two generations' commercial experience in China, and in opposition to Chinese bad will, can expel from any market upon which they concentrate the American traders who have had five generations' experience, and Chinese good will.

When war broke out and close attention had to be paid to the Germans in the Orient it was found that they had indulged in a good many commercial practices which were by no means commendable, but that what business they had they owed to a close study of the market and to coöperation between the manufacturer at home and the agent in the field in meeting the precise needs and predilections of the market. This, more than anything else, aroused much enthusiasm in all the Treaty Ports in a study of the Chinese, their language, their habits, and their ways of doing things. Getting to know the Chinese was the passion of the hour. It was too radical a change, however, to last. Chinese could not be acquired in a month. It was discovered that with a vocabulary of a hundred words and a few forms of etiquette one could not fathom the soul of the Oriental at the first few meetings. So enthusiasm waned, and those who had abandoned their hours at the club for weary sessions with drowsy Chinese teachers and had given up reading magazines to read serious books on China, soon found reason to get back to the club and the magazines. It is too easy to let the Chinese do the studying; let them learn English and Occidental ways and then use them. One may be at the mercy of the compradores, interpreters, shroffs, and boys upon whom one relies as intermediaries, but then one does not have to be bothered with intricate Chinese codes of etiquette and trade; one does not have to sacrifice any of the prejudices so carefully cultivated in the small town from which one came; and there is no danger of having one's wholesome American or British character tainted with Orientalisms. Travel abroad is supposed to give a man breadth of view, to humanize him. Now the only manifestations of the culture which the average American small-town drummer, sent to China to represent his firm because no good material can be wasted on this barbarian market, acquires

after some year's residence in China, are a taste for whisky and soda, a penchant for bullying servants, a dislike for work, and an accentuation of his schoolboy prejudice against the British, whom he learns to detest cordially because they are not quite like him and don't seem to want to be. This is one of the reasons why it would pay many a New York firm, which decides to trade across the water, to go no further over the brine than Jersey City.

To do business in China a firm has to have an intelligent and interested agent in the field who will report upon the requirements of the market and get into direct touch with the ultimate consumer to find out exactly what he wants. But an intelligent agent in the field must have an intelligent firm behind him which will act upon his information and meet the special demands of the market, or his information and his connections are useful to no one but himself. A very big percentage of the American firms at home which are advertising their eagerness to get into the export field after the war show about as little inclination to absorb and use intelligent opinion about the Oriental field as their agents abroad do in furnishing them with it. The Germans were making headway when war broke out because they were ready to learn and adapt themselves to the needs of foreign markets both in the factory and the field. The few American firms which are really doing well in the Orient owe their prosperity to the same tactics. The great number of firms, however, which pretend to be in the Far Eastern trade, sell no more to China's vast population than they could market in Boston or Baltimore at half the cost, nor do they deserve to. They will not advertise in the East; they will not send the class of men to the East who can do business with intelligent business men of other nationalities or learn to do business with the Chinese; and if they do happen to have a good representative in the Orient they will not support him by supplying what he calls for in the form in which he wants it. Fifteen years ago these comments were being made upon the traders who were trying to break into the South American trade. It seems that things have improved there, but it has not dawned upon American exporters that the painful truths learned in that field might have some application in another foreign market.

The mails bring us an intimation that the American exporters who had three years of peace and prosperity in which to study the deserted markets of Asia, are now complaining to one another that in spite of the fact that Great Britain has appeared to be too busy fighting to do anything else, she is going to have a bigger hold upon these Asiatic markets after the war than she ever had, and a big lead in trade over every one throughout the world. Now the British are not the most diplomatic and adaptable people in the world, and if there is reason to believe that under the conditions of the past four years they have been able to improve their trade prospects at the expense of America's trade prospects, it ought to be good enough evidence to the disgruntled that there is something wrong with the American way of going about things. There is a marked difference in policy, which those who have to correspond with both British and American manufacturers have noted, which has a bearing on the trade situation. If an American manufacturer of nails is now busy turning out aeroplane parts to the full capacity of his plant and is told that he ought to make connections in Bangkok, he will scathingly comment upon the city which he imagines is in Africa or the South Seas or some such place, and tell you that his product is going to France and that when the war is over and he gets back into the nail business, he'll look the place up in the Encyclopedia and write to the consul if it seems worth while. The British manufacturer who is in the nail business, but who is turning out aeroplane parts to his full capacity gets to the Atlas, the Encyclopedia, and other works of reference when Bangkok is suggested to him, runs down information, and then says to his partners: "We can't sell any nails to Bangkok now, but the field seems to be open, so let's open an office there, hang out a sign, make friends, and build a prospective trade that we can enter upon the day peace is signed." In time of war prepare for peace is just as sound commercial advice as the reverse of it is sound political advice. There are other kinds of preparedness besides military preparedness, but America insists upon paying dearly for wisdom and it will have to cost her something before she will admit that there is such a thing as commercial preparedness.

Bread Upon the Waters

For a good many years the American Red Cross Society has shown an interest in China's numerous misfortunes which the Chinese people have come to appreciate. The indescribable suffering which follows drought, floods, and plagues in China has always been relieved in some part by subscriptions of funds in America and other countries, and when called upon the American Red Cross has never failed to contribute a very large share of the relief funds. The Huai River Conservancy scheme grew out of Red Cross relief work in a district where annual floods have caused great misery and where the Society took the pains to use experts in conservancy engineering to determine whether it would not be better to prevent trouble than to relieve it. After the floods in Chihli last Autumn the American Red Cross responded very promptly and very liberally to an appeal for funds, and both shelter and work were provided for thousands of homeless refugees. The total of the funds which the American Red Cross Society has expended in China is not immediately available, but it is very large and it has made a very deep impression upon intelligent Chinese opinion. There has never been any reason heretofore to ask for a return, but the time for asking has now come, and it would seem that the Chinese are about to anticipate an appeal by putting up their money before they are asked.

In time of peace the drain upon the Red Cross Society's finances are not heavy, but with the world at war and with millions of men in Europe frantically busy mutilating each other's persons and rendering life intolerably miserable for the entire civil population of a big war zone, the burden which the Red Cross assumes is stupendous. The Red Cross has never before been demonstrative in its appeals, but for some months past its needs have been vigorously advertised and humanity's debt to this institution has been impressed upon every community in America in forceful appeals which have brought satisfying results. The campaign has now been carried across the Pacific and on the 20th of this month a "drive" will be organized in China. It cannot be too thorough or too persistent. The appeal is not national, for there is no nation on earth which is not in debt to the Red Cross and no nation which should be permitted to evade its responsibilities.

It must be gratifying to those who have been instrumental in getting and spending American money for Chinese relief in the past to find now how energetically the Chinese are preparing to respond when the drive begins. Every Chinese organization of every importance is taking it up and the leaders of the business community in Shanghai say that they will produce a million members and contributors before the drive is over.

The appeal of course will not be to the Chinese alone. The wealthy foreign communities in China will be called upon and will be expected to contribute handsomely. There will be no attempt to wheedle money out of any one, but there will be an effort made to put before every individual the needs of the Red Cross Society and his indebtedness to the organization, after which he will be left to think it over and to decide how much he ought to subscribe and how much he can afford to subscribe. If a man amounts to anything, and if he knows what the Red Cross is doing and what it has still to do, and if he has a margin of a dollar over his indebtedness, it should not be very difficult to get that dollar.

Sino-Japanese Agreements

Editors and correspondents throughout the Far East are bubbling over with comment upon what they describe as a new group of Japanese "demands" upon China. There may be ample ground for bubbling, but in view of the changes which have come over China in the last three years the use of the term "demands" indicates that the scribes are either careless in their selection of words or have failed to appraise correctly the official Chinese attitude towards negotiations with Japan. Demands belong to

the Okuma ear. They were undiplomatic, unprofitable, and they served no purpose except that of arousing the suspicion and animosity of the world. Apart from the fact that demands, as such, have proved to be a very poor diplomatic instrument, there is no longer any necessity for them. There is no profit in bullying a man out of his property or his rights, thereby running the risk of finding oneself outside the law, when the person whose property you would acquire is quite ready to dispose of anything he possesses in an amicable and friendly way for a trifle. There is no reason to demand anything of China now, when one has only to suggest one's desiderata to have whatever concessions, or privileges, or exclusive rights one has a fancy for, put upon the counter and priced. Of this, we can rest assured, Japan is fully aware; and as Japan has shown herself very sensitive to criticism recently and very careful to avoid suspicion, it is safe to assume that if she is acquiring any of the inalienable rights of the Chinese people in the course of the negotiations which are now going forward in Peking, it is because the political and military leaders in the capital, whom the Treaty Powers recognize in the aggregate as the representative government of the Republic of China, are quite cheerfully giving them away or peddling them away.

The negotiations in Peking, which have aroused so much comment and have brought forth a crop of alarming rumors, have hitherto been secret. The Chinese officials concerned have been in possession of the tentative terms of whatever agreement is being drawn up for two months, but the Peking press still has no better text for its editorials than unconfirmed gossip. The value of publicity was fully recognized in 1915 when Yuan Shih-kai was resisting the notorious demands with all his strength, and the demands were no sooner presented than the substance of them began to leak into the hands of those who could make the most of it, while the full text had been wired several times around the world while the Japanese were still guarding against leakage with every precaution. The fact that after two months of conferences in Tokyo and Peking no authentic report of the terms of the prospective Sino-Japanese agreement, which is said to contain so many disastrous concessions, has come into the hands of any publicist is evidence enough to any one who knows Peking that the Chinese in charge of negotiations are ready and willing parties to the discussions. It was easy in 1915 to work oneself up to a high pitch of partisan indignation and to fill columns with ardent championing of the Chinese and with scathing denunciations of the Japanese. Assuming that the Chinese Government is now relinquishing a hold upon rights or possessions to her disadvantage, it is impossible for any former champion of Chinese liberties to take the vigorous stand that was taken by all Occidentals in China in 1915 without placing himself in the foolish and embarrassing position of a man who rushes to rescue a woman from violence and finds that he is interrupting a *liaison*.

For interference in such a situation as now exists the defender of Chinese liberties gets no thanks from the persons whom the Chinese permit to rule them. Advice is irritating to them and any display of feeling becomes ridiculous as it stands in contrast to the cool indifference with which they proceed with their negotiations. Yet if we say to the Chinese "so be it," and to the Japanese "go as far as you like, the field is yours," the Oriental welkin is rent with reproaches and accusations. The Occidental is told that, in washing his hands of a people who will carry any burden of chains and shackles if they are paid so much per link, he is betraying them to their natural enemies, but the Chinese who make the bargains and seal them are simply shrewd business men in the eyes of their fellow countrymen. This is the gall in the cup.

No one who has come to know the Chinese people well, who has enough knowledge of their civilization to appreciate it and who is familiar with their history, ever fails to have a keen sympathy for them. There is no one who knows China who would not delight in seeing her develop a strong, wholesome democratic government that would make her independent of outside interference. America's interest in the preservation of China's independence and integrity is almost sentimental, and America has made this attitude popular with most of the Treaty Powers. It is exceedingly difficult, however, to keep a keen edge on one's interest and sympathy when the Chinese themselves put

no higher valuation upon the rights which the Treaty Powers are laboriously safeguarding than their negotiable value in the pawn shop. It is too much like wading through the mud to rescue a poor man's hat only to see him pawn it for the price of a drink.

All of which does not imply that the Chinese are actually disposing of anything or that the Japanese are actually acquiring anything; it is simply meant to explain why scores of those interested in China, who were in a white heat in 1915, can now approach the discussion of the reported bargaining coolly and dispassionately.

It is said that about two months ago, when it first appeared that China and Japan might have to take joint action to check a German inspired Bolshevik descent upon Manchuria, the Chinese Minister in Tokyo, under instructions from Peking, entered into negotiations with the Japanese Government with a view to framing a scheme of coöperation. It is reported that the Japanese war office found pretexts, in prospective military coöperation in Manchuria and in China's military and financial disorganization, for insisting upon Japanese supervision of Chinese military and naval movements, Chinese finances, and Chinese communications. When the scene of the negotiations was shifted to Peking discussion was limited to a secret military conference, supposed to be discussing military affairs only, but said to have agreed to a schedule of nominal coöperation which places every branch of the Chinese administration worth controlling under Japanese appointees, and to have arranged for a loan of \$30,000,000 on the basis of Baron Sakatani's currency reform scheme. Recently the severe criticism directed against the Government for keeping these rumored negotiations secret and for intrusting them to a small group of inexperienced military officers, prompted the Government to put the agreement in the hands of the Foreign Office, hitherto ignored.

Now the Chambers of Commerce have protested vigorously, but the Government replies that the reported agreement in twenty articles, which is said to concede the control of the army and navy, of all arsenals, of the police in all large cities, of finance and the collection of the all-important land tax, and of much besides to the Japanese, is all piffle. All the Government is doing, say the manifestos, is to arrange a scheme of coöperation in the field, which will not be effective unless China and Japan do find a Siberian campaign forced upon them and which will remain in effect no longer than the armies are in the field. To which the general retort is, "Then why so secret about it?" It can easily be understood that if the Japanese anticipated a really serious campaign in Eastern Siberia and found it necessary to go into the field with the Chinese, they would insist upon having some sort of control over the rag-tag Chinese army before putting any reliance in them as allies. It can also be understood that to whip the Chinese army into a state of usefulness within a reasonable time, somebody other than Chinese would have to have the handling of men, money, and munitions. But if this is all that is being arranged both Chinese and Japanese do seem to have gone to a lot of trouble to keep it quiet, and the mystery which surrounds the conferences does bear such a close resemblance to that which was created in 1915, while the explanations look so much like the same *camouflage* that was employed in 1915, that one cannot blame the journalists of the whole Orient for leaping to conclusions nor the Chambers of Commerce, in conference in Tientsin, for accusing the Government of selling China. This is the attitude of the English press in Shanghai. "If it is only a tentative arrangement for possible coöperation in the field," the Shanghai papers ask editorially, "why the mystery?"

The Political Side

The Chinese Government, in defending itself against the criticism of the press and of such bodies as the United Chambers of Commerce, says that the comment is politically inspired, that the Southern opponents of the Tuan régime in Peking are trying to discredit it by accusing Peking of betraying China to the Japanese, their purpose being to undermine the power of the Northern leaders who are directing the campaign in Hunan and the Yangtze Valley, which is proving so disastrous to the Southern forces. The Southern politicians undoubtedly welcome the

opening which these conferences in Peking have given them for damaging Peking's credit with the Chinese people, but until the terms of the agreements under discussion are made public it would be rash to assume that all the clamor and criticism directed against Peking is politically inspired and has no better or more tangible foundation.

Apart from whatever patriotic motives might inspire the Southern leaders to give wide publicity to a story of Peking's accession to certain insidious Japanese desiderata, political motives would certainly be strong enough to move them to a publicity campaign. The Peiyang party in the North which, six weeks ago, was supposed to have been on the verge of disintegration, while the Southern factions were supposed to have been united in a strong confederacy, has reunited, taken a strong lease on life under the direction of Premier Tuan Chi-jui and has, in a few short weeks, retrieved from the South all the territories lost in the Central Yangtze, while the much advertised Southern Confederacy has dissolved and the Cantonese constitutionalists have been despitely treated by one of their strongest military props, General Tang Chi-yao, Governor of Yunnan.

Through General Hsu Shu-cheng's manipulation of the Manchurian forces, who seized a store of Japanese arms, which were about to be delivered to Peking, and then threatened a descent upon Peking itself, and through the return of Liang Shih-yi and other pardoned monarchists of the Yuan Shih-kai following, the recalcitrant elements in the Peiyang party were either won over or overawed, Premier Tuan was put at the head of things and a businesslike drive into Hunan was at once undertaken. A threatened weakening in the *morale* of the Northern forces under Tsao Kun, Chang Chin-yao, and Chang Huai-chih, who have not been getting on too well together, was forestalled by the Premier's trip to Hankow and his conference with the leaders, so that the North is now more firmly united and stronger than it has been since Yuan Shih-kai's death. Now the financial support for these big military movements must, as the Southerners point out, be coming from Japan, and as Japanese loans usually entail something in the way of a concession, the coincidental prosperity of the Northern forces and the conferences in Peking have in the eyes of the Chinese a suspicious connection.

Foreigners in China have for the most part been convinced that there is little profit in supporting any faction in Chinese partisan politics. Every party that one champions is so disappointingly like every other as soon as it acquires a little power. But foreign residents always contrive to arouse a fresh interest when the Chinese give promise of actually doing something. The big Northern push into the Yangtze and on into Southern Hunan, has therefore been welcomed in many quarters as a sign that one faction at least has abandoned barter and subterfuge for a vigorous campaign. The relish with which this is remarked is of course much tempered by the suspicion now rife that the energy and vitality behind this drive is Japanese rather than Chinese and that the Chinese delegates at the Sino-Japanese conference in Peking are sacrificing Chinese rights and liberties in the name of the Chinese people as the price of the rejuvenation of the Peiyang party and its armies.

Whatever is going on it cannot be emphasized too strongly that the responsibility is with the Chinese, or rather with the leaders whom they permit to hold office. If a sale of Chinese liberties is going on we can feel as strongly as we like that the Japanese are reprehensible in accepting what is offered, but we

cannot tender any great sympathy to those who are selling out. No definite position can be assumed at any rate until the Chinese parties to the negotiations decide to take the nation which they represent into their confidence.

Japanese Financial Expert for China

Baron Yoshiro Sakatani, who arrived in Peking at the end of March to discuss the question of China's finances and currency with a view to determining whether or not he will accept the post of Financial Adviser to the Chinese Government, is by training and experience fully competent to deal with the great questions he has set out to consider. He has been steeped in an atmosphere of financial and currency reform. His official training was in the Finance Department in Japan, where he entered in 1887 and where he remained without a break, gaining experience as Councilor, Accountant, Director of Accounts, and Vice Minister, until he became Minister of Finance in 1906, which post he held till 1908, when he resigned. In 1910 he became Vice President of the Census Committee, and represented Japan at the Peace Conference at The Hague in 1911, but a much more important national appointment was his selection as Japan's delegate to the Allied Financial Conference at Paris in 1916. In addition to his financial knowledge, he gained experience in municipal administration as Mayor of Tokyo, which post he held from 1912 to 1915.

While Baron Sakatani has not been to Peking before he has visited other ports, and has taken a keen interest in Chinese matters, which is only natural when his position in Japan is remembered, and seeing that he is the son of one of Japan's most celebrated scholars in the Chinese classics, he now brings to China an open mind, which is an important thing when the probable appointment is considered from an international angle. Baron Sakatani is aware of this, too, for one of the first statements he made to the writer, when discussing his visit to China, was that he intended, if he took up the post of Adviser,

strictly to view all questions from the international viewpoint. His purpose at present is to look over the ground, a task which will occupy him some three months. He will visit China's important commercial centers after he has investigated matters in the Capital, and he will be guided in his acceptance or refusal of the Advisership by the results of his findings and the evidences which the officials give of their earnestness or otherwise to have financial reforms instituted. The Baron has made up his mind to one thing and that is that he will in no circumstances accept a sinecure. If the Chinese do not want his services, he will not accept title or pay from them. He is not a candidate for what one critic once described as the International Beauty Show—the paid but unemployed foreign Advisers who inhabit the Capital. He will make recommendations to the officials concerned after he has investigated conditions, and if the Government is sincere in a desire for betterment, Baron Sakatani will agree to devote himself to the work. If not he will remain in Japan, where he returns in June in any circumstances.

In the course of an interview with a Japanese newspaper before leaving Japan the Baron said:



BARON YOSHIRO SAKATANI, A JAPANESE AUTHORITY ON FINANCE

"There is no manner of doubt as to the urgent necessity of currency reform in China, though it is admitted by all that its consummation is a most difficult task. My interest in the currency reform in China is of a rather old standing since, as far back as 1888, I submitted my views to Li Hung-chang in the name of Baron Shibusawa relating to currency reform in China. At present, China is in financial straits and in great need of foreign capital, but it is obvious that so long as the currency system in the country is not placed on a more satisfactory basis the introduction of foreign capital on any large scale can hardly be expected.

"Notwithstanding the fact that the money market in Japan is suffering from a plethora of funds, the capitalists are rather shy of investments in China inasmuch as it is not quite safe under the prevailing system of currency. At present silver is quoted at 43 pence or thereabouts, but if the quotation falls, to say 22 pence, as it was before the war, the amount of capital invested will have to be reduced to one half. No wonder that Japanese capitalists should show hesitation in their investment in China. If China adopts a gold standard and her currency system is put on a substantial basis, the introduction of foreign capital and joint enterprises between Chinese and foreigners will follow as a matter of course."

Nutgalls

Were one to make the statement in his presence that the brilliancy of the red trousers so esteemed by the Filipino and the Malay generally was due in part to a parenchymatous hypertrophy which had occurred in China there might be a repetition of the famous case in which a fishwife, past mistress of Billingsgate slang, had a London joker taken up for insulting her by using the phrase "rectangular parallelipipedon" in her presence. However, if it were explained that the hypertrophy in question were caused by an insect and that the resulting product, Chinese nutgalls, was used in the dyeing of Turkey red cotton cloth, amity might be restored.

What are commonly known as galls, says the encyclopædia, are vegetable deformities or excrescences, due to parenchymatous hypertrophy, and, according to the definition of Lacaze-Duthiers, comprise "all abnormal vegetable productions developed on plants by the action of animals, more particularly by insects, whatever may be their form, bulk, or situation." For the larvæ of their makers the galls provide shelter and sustenance. The exciting cause of the hypertrophy, in the case of the typical galls, appears to be a minute quantity of some irritating fluid, or virus, secreted by the female insect, and deposited with her egg in the puncture made by her ovipositor in the cortical or foliaceous parts of plants. This virus causes the rapid enlargement and subdivision of the cells affected by it, so as to form the tissues of the gall.

Nutgalls are among the important minor products of China's commerce and in 1916, some 3,100 tons valued at Gold \$817,000 were shipped from Hankow, Chungking, Yochow, and Ichang. Where, as in former years, Germany took the largest quantity of nutgalls, as of practically every other Chinese product that could be worked up by chemical means, in 1916 the exports were to the United States, 1,572 tons, valued at \$413,000; Great Britain, 810 tons, valued at \$213,000; and Japan, 230 tons, valued at \$60,000. Upwards of 1,200 tons were used in China in 1916 and the total production as given in the Customs returns was 4,300 tons, valued at \$1,100,000.

Nutgalls are one of the principal sources of the tannin used by the dyer. Among other properties of tannin is that of fixing certain colors on cotton fiber so that they are fast and cannot be washed out. The tannin treatment is known as the "three bath" method of dyeing, as the cloth is first passed through the dye, then through the tannin, and finally through a bath containing tartar emetic (antimony tartrate) or other metallic salt which forms an insoluble compound with the tannin and the dye-stuff. Nutgalls were formerly the only source of ink, and even in the face of the competition of nigrosine and other artificial dyestuffs, they are still largely used in its preparation. Ink, as made from nutgalls, is an iron tannate which fixes itself into the fibers of the paper and becomes a black insoluble pigment after exposure to air and light. This compound, however, gradually decomposes and in time the ink fades to a brown, which

is an oxide of iron, the tannic acid having separated from the iron and evaporated. Modern inks made with gallnuts have various dyestuffs added to produce a quicker and perhaps more permanent black.

The Chinese galls of commerce are stated to be produced by *Aphis Chinensis*, Bell, on *Rhus semialata*, Murr., an Anacardiaceous tree indigenous to North India, China, and Japan. They are hollow, brittle, irregularly pyriform, tuberculated or branched vesicles, with thin walls covered externally with a gray down, and internally with a white chalklike matter, and insect remains. The escape of the insect takes place on the spontaneous bursting of the walls of the vesicle, probably when, after viviparous reproduction for several generations, male winged insects are developed. The galls are gathered before the frosts set in, and are exposed to steam to kill the insects.

Commercial gallnuts have yielded, on analysis, from 26 to 77 per cent of tannin, with gallic and ellagic acids, ligneous fiber, water, and minute quantities of proteids, chlorophyll, resin, free sugar, and, in the cells around the inner shelly chamber, calcium oxalate. Chinese galls examined by Viedt yielded 72 per cent of tannin, and less mucilage than Aleppo galls. Several other varieties of galls are produced by Aphides on species of *Pistacia*.

Oak galls are mentioned by Theophrastus, Dioscorides, and other ancient writers, including Pliny, according to whom they may be produced "in a single night." Their insect origin appears to have been entirely unsuspected until within comparatively recent times, though Pliny indeed, makes the observation that a kind of gnat is produced in certain excrescences on oak leaves. Bacon describes oak apples as "an exudation of plants joined with putrefaction." Pomet thought that gallnuts were the fruit of the oak, and a similar opinion obtains among some of the Chinese, who apply to them the term Mushihitsze or "fruits for the foodless."

Hippocrates administered gallnuts for their astringent properties and Pliny recommends them as a remedy in affections of the gums and uvula, ulcerations of the mouth, and some dozen more complaints. The drug has been used in the treatment of intermittent fevers, but appears to be adapted only for their mildest phases. In Western pharmacy gallnuts are used in the preparation of the two astringent ointments *unguentum gallae* and *unguentum gallae cum opio*, and of the *tinctura gallae*, and also as a source of tannin and of gallic acid. They have, from very early times, been resorted to as a means of staining the hair of a dark color, and they are the base of the tattooing dye of the Somali women. On the Continent they are employed in tanning, but their largest use is by the dyer in fixing fugitive colors on cotton, especially in the lighter shades, where other cheaper but dark colored tannin materials would discolor the fabric and dull the appearance of the dyed cloth.

Lee Chong's Godown in Shanghai

[By I. OESTERBLOM, MANAGER BUILDING DEPARTMENT, AMERICAN TRADING CO.]

Lee Chong's godown at No. 7 North Soochow Road, Shanghai, is quite different from any other proposition in the city, and represents the acceptance on the part of a progressive Chinese merchant of the best ideas developed in American warehouse construction.

The godown consists of a reinforced concrete skeleton with brick curtain walls for the outside and plastered Hy-Rib partitions in the interior. The front portion is three stories in height, the rear being two stories only. The area covered is very elongated, the two side walls butting on adjacent buildings, likewise the rear, with the front facing North Soochow Road. Owing to this condition, very little outside light can be obtained from the sides, a big portion of the necessary daylight being obtained through the skylights, which serve at the same time to carry off the foul or the heated air from the interior. Separate vent shafts have also been provided for this special purpose. The two lower floors are intended for godown purposes. Since the owner is an iron merchant, it is evident that the loading will be very heavy, and the type of construction has been selected with this point in view. The upper floor, which is level with the roof on the rear portion, is set apart as living apartments for the family of the owner. It contains all the necessary modern conveniences and equipment and is decorated in a most attractive manner.

A great portion of the material required in the construction of this godown has been obtained locally. The Chinese are brick-makers since thousands of years ago. The grade of brick they produce, however, is very poor, not so much on account of poor raw materials but on account of the methods employed in manufacturing. The brick therefore is very porous and uneven. It has little strength and would, under ordinary circumstances, be an unsatisfactory structural material. For purposes of building curtain walls, however, in connection with reinforced concrete structures, it is acceptable, provided the outside surface be properly protected through waterproof plastering. This is in order to prevent penetration of moisture into the interior.

Sand and gravel, of course, can be obtained locally at very reasonable costs. The best sand, however, is difficult to obtain, most of it being entirely too fine and not altogether free from impurities. Cement from local plants is of the very highest order and compares favorably with the best obtained in the United States; in fact it may be considered as superior to most American brands.

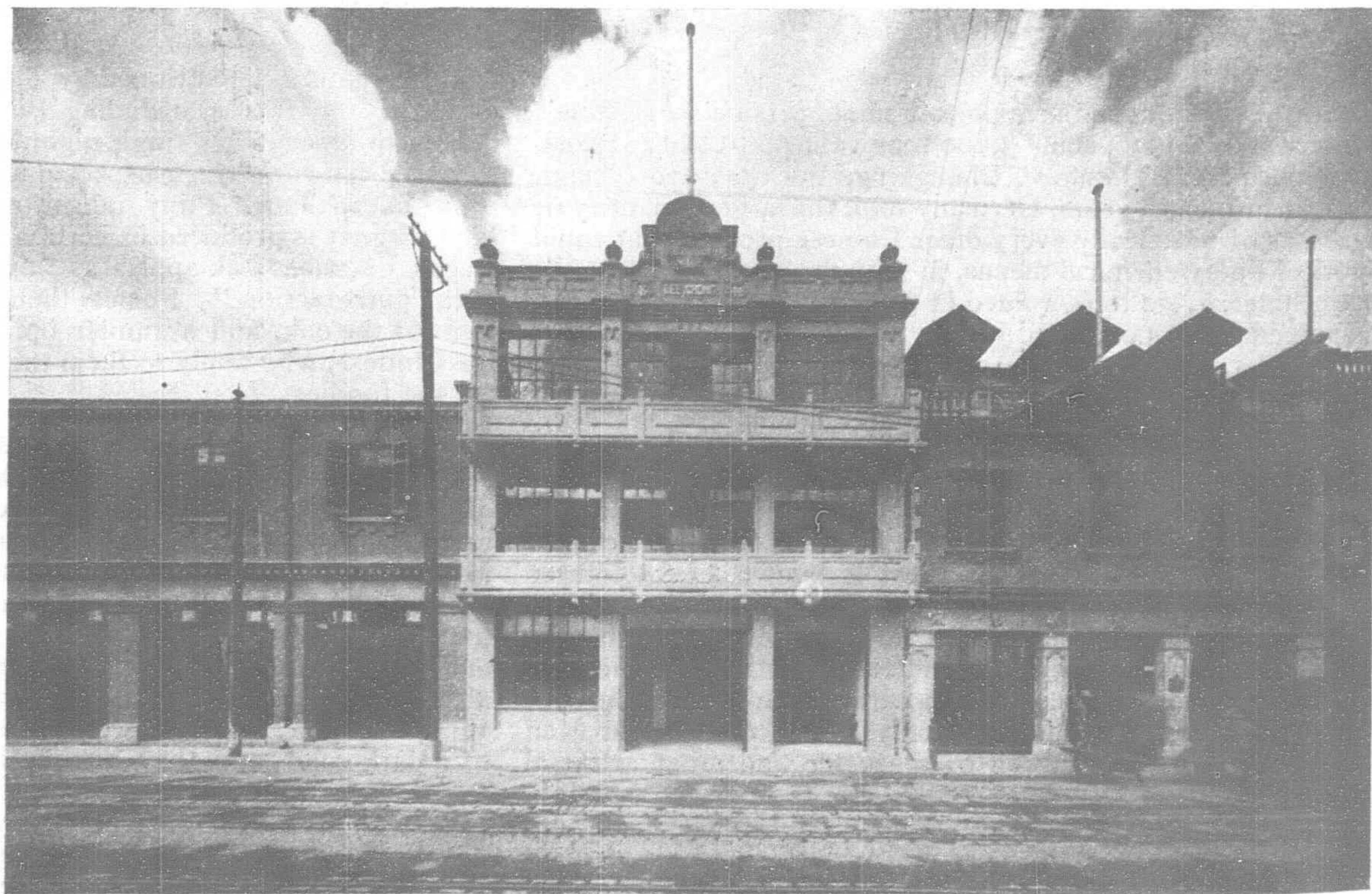
Special equipments, as, for instance, steel sash and doors, rolling steel doors and shutters, a freight elevator and so forth, quite naturally had to be obtained from abroad, and this is true also of the reinforcing materials, Rib Bars, Hy-Rib, Steel Lath, which are used in the reinforced concrete structure; also Stonetex and Asepticote, which were employed in decorating the building.

The construction of this building was begun towards the end of last

year and was carried on rapidly, considering Chinese labor conditions and organization. Owing to the difficulties of obtaining some of the special materials as early as really intended and desired, the final completion was somewhat delayed. The building is now finished, however, and stands as a monument of up-to-date American engineering on the shores of Soochow Creek, where thousands of Chinese junks and sampans pass daily carrying their cargoes in the same primitive manner as was done thousands of years ago to and from the great lakes in the interior.

In the construction of the building, modern machinery and methods were employed to a considerable extent. The concrete was mixed by a machine mixer, a method known in Shanghai for the last ten years. It may be of interest to point out that the mixer was of local Chinese design and manufacture, showing that the Chinese mind has thoroughly grasped the economic importance of this sort of equipment and incidentally belying the statements of the engineering press that hand mixing is the only method employed and found profitable.

The foundations of the building proved particularly difficult and at the same time an attractive problem, as all foundations do in Shanghai, owing to the unusual conditions of the soil. This soil is very soft, capable of sustaining a load of only 1,700 pounds per square foot, and even this figure at times is entirely too high. In those parts of the city where the soil has sufficient adhesion to permit walking on top, the graded surface that has been prepared for foundation gives way under the weight of a man walking thereon and traces on the surface of the soil like the waves of the water follow him on his progress forward. A substantial reinforced concrete foundation carefully proportioned and designed was therefore necessary. The balance of the work did not offer any particular difficulties, the construction being quite ordinary, except that the floors for Shanghai were somewhat unusual, a girderless type being used here for the first time. The calculations for this floor were based on very accurate and conservative assumptions in accordance with best practice in the United States, after following the more recent investigations on the subject.



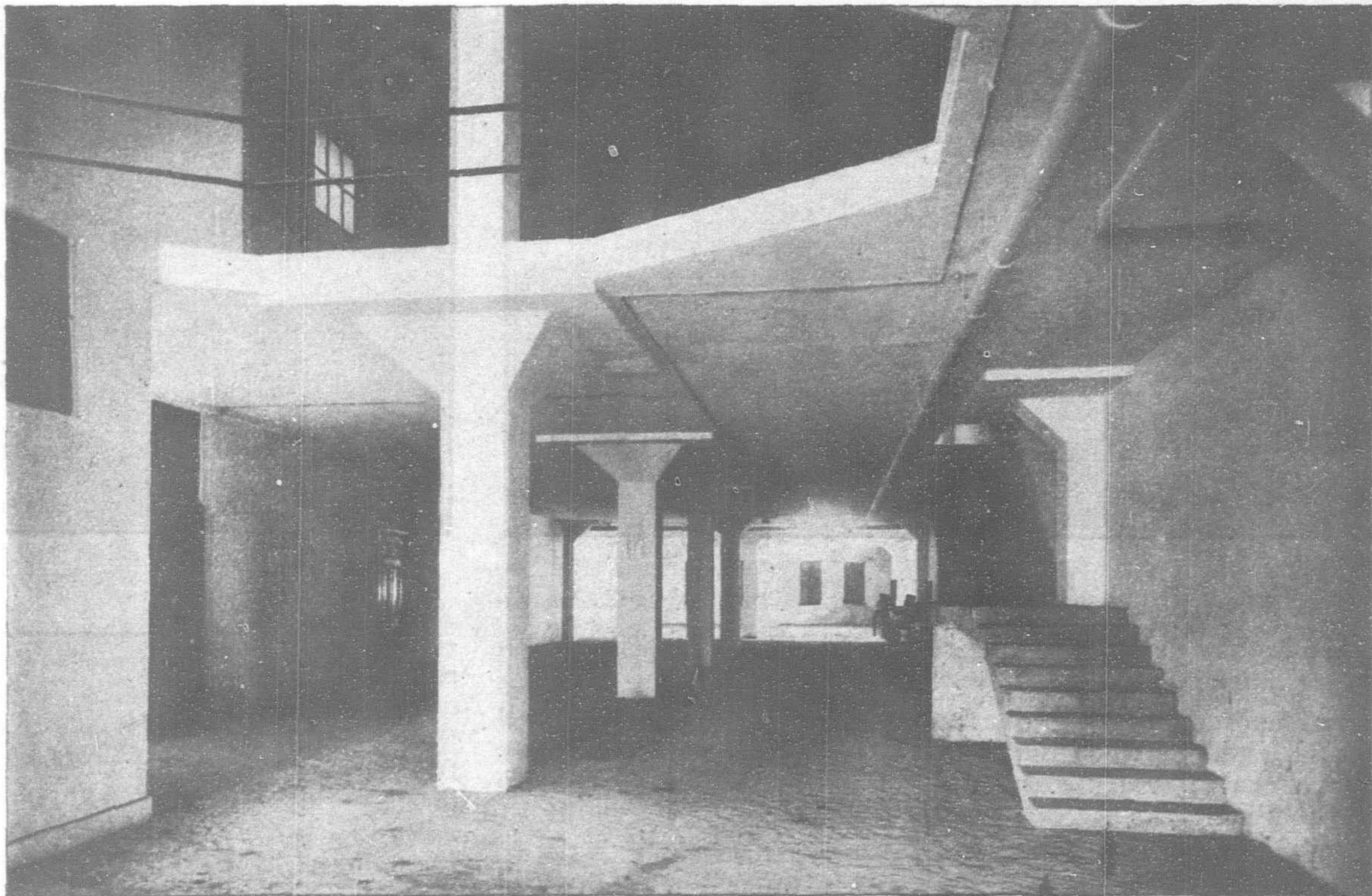
THE NEW BUILDING, SHOWING STEEL DOORS, SASH, AND ROLLING SHUTTERS

The construction of Hy-Rib walls in the interior is not exactly a novelty in China, Hy-Rib having been sold in past years as a stock article. The construction, however, is one of the first ones to be treated as an engineering proposition, American engineers having been in charge of all the details and directing how the materials should be used in order to obtain the best results.

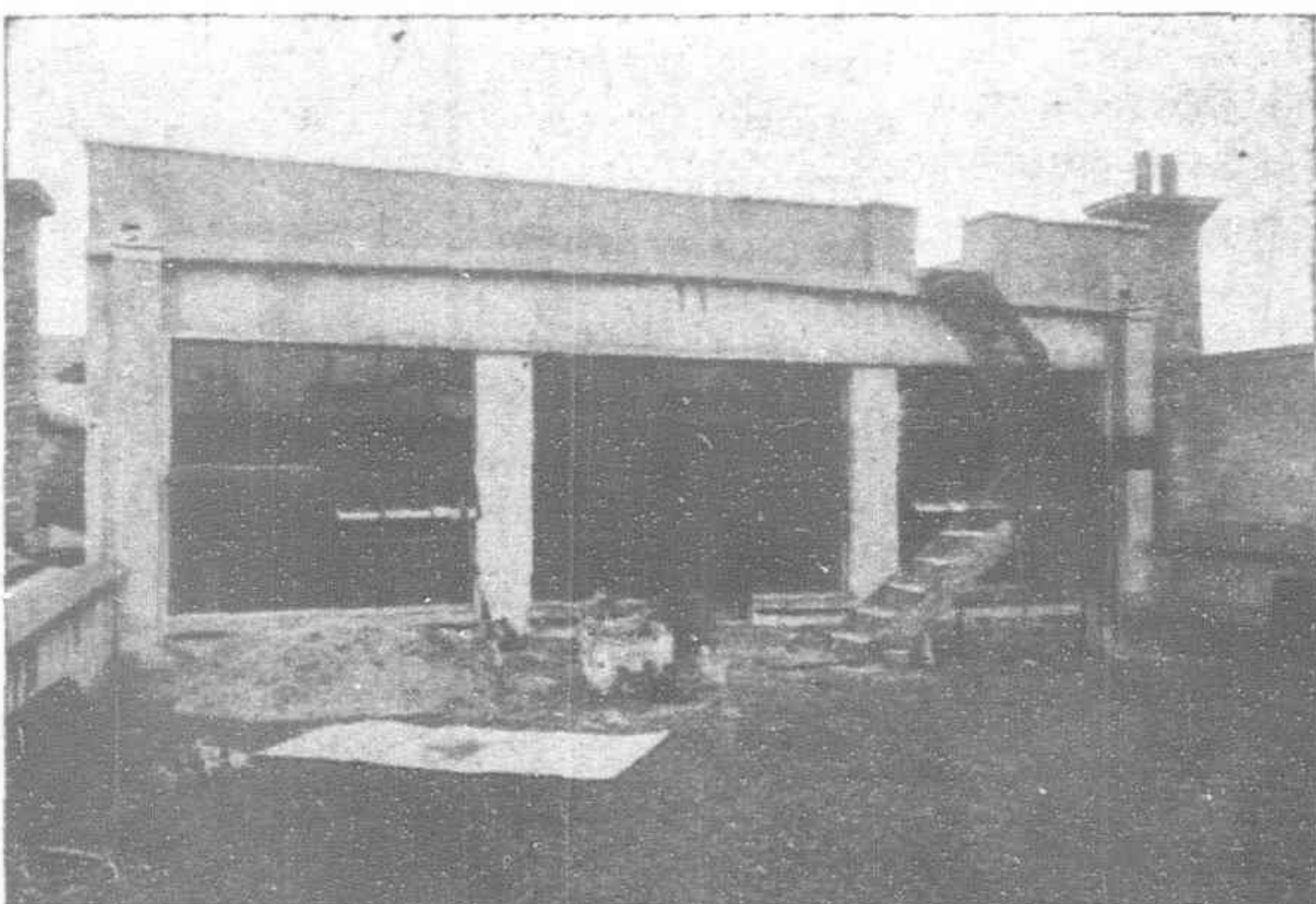
Steel sash is comparatively a novelty for this port, and it speaks highly for the farsightedness of the owner that he wanted nothing but the best, and he is now quite proud of the United steel sash which has been erected. Although merely a relatively low-priced factory type of sash, it has, through correct proportioning, added attractiveness to the façade.

The vent shafts, the fireproof partitions in the interior, the fireproof inclosure around the stairway leading to the apartments, the rolling steel doors, and the freight elevators may be considered as novelties for this type of building. They have contributed to place this godown in a class by itself, a fact thoroughly recognized by the building authorities in the town as well as by the owner and his friends.

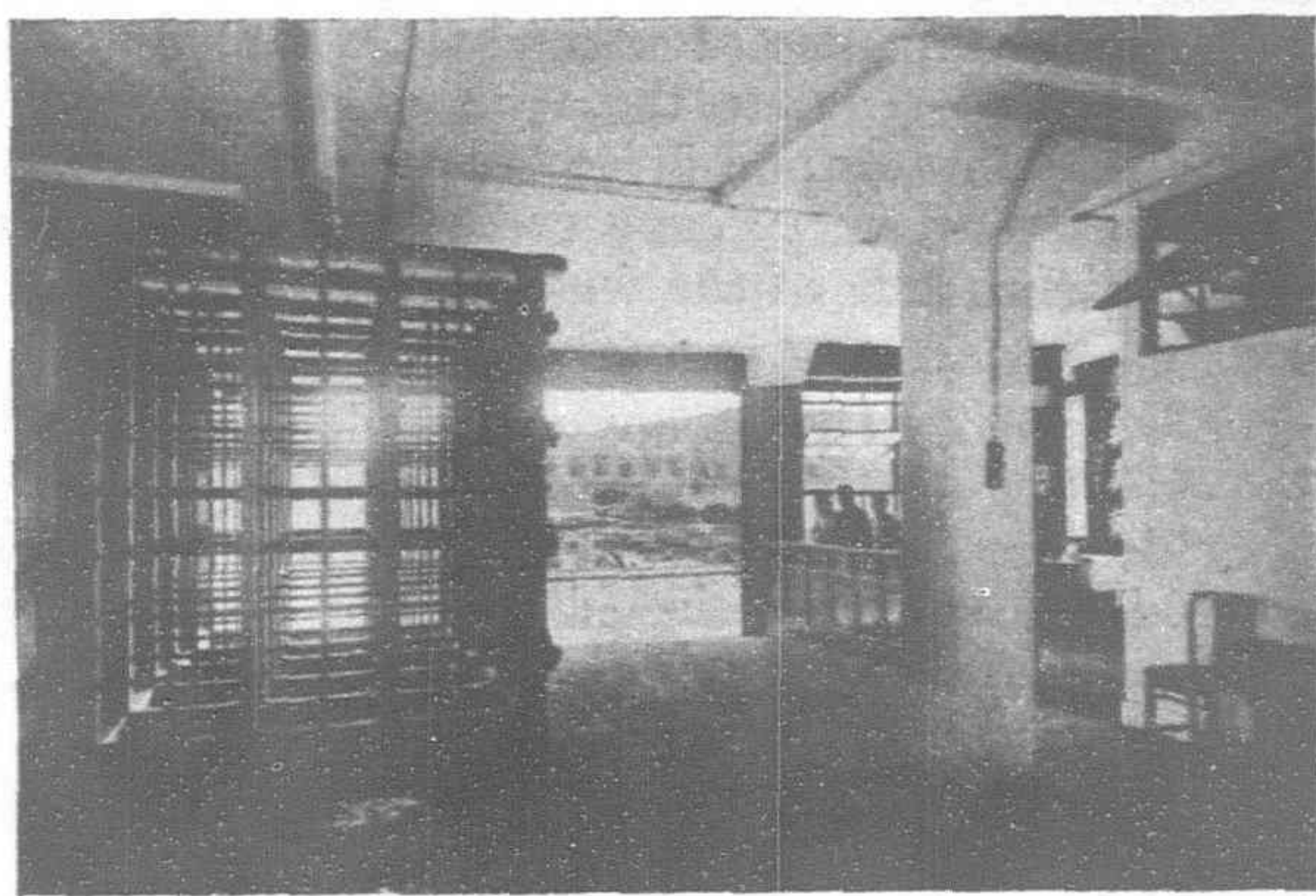
The decorating of the apartments gave rise to an unusual controversy, which, from the American point of view is very interesting, the Chinese contractors and building experts proclaiming loudly that painting of fresh concrete walls and cement partitions would prove to be entirely impossible. Thanks to the use of Alkabar, however, on top of which some delicate tints of Asepticote were applied, one of the most attractive apartments has been obtained. It is arranged in Chinese style to suit Chinese conditions, but decidedly of the highest type for such occupation. Modern sanitary installations in these apartments are equal to the best found in modern American apartment houses.



INTERIOR, SHOWING CONCRETE CONSTRUCTION



REAR ELEVATION



INTERIOR, LOOKING TO THE FRONT

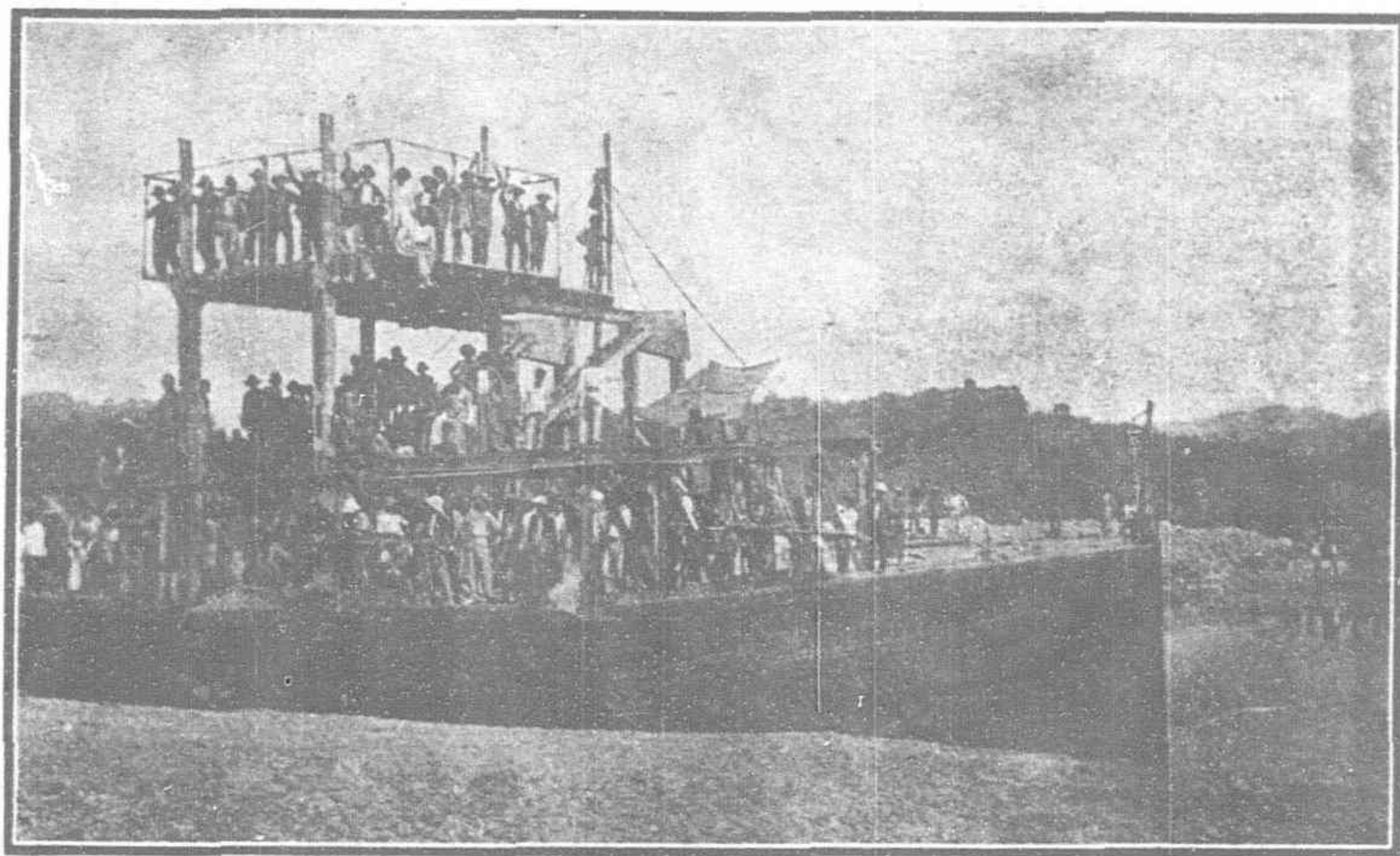
The design of this building was executed under the supervision of a Chinese architect, with the American Trading Co. acting as consulting engineers and also as general contractors. All the imported materials were obtained through this company, who, in the erection of the structure, acted on behalf of the Trussed Concrete Steel Co. of the U. S. A. The building is a typical Kahn System building. For the appearance of the building and various details we beg to refer to the photographs, each one of which carries its own explanation.—*Modern Building.*

Tin Dredging in Siam

The East Asiatic Company of Copenhagen, Denmark, have recently put in operation on their alluvial deposits at Pong, on the River Kopah, Siam, a bucket elevator dredge with a $5\frac{1}{2}$ cubic foot close connected chain of buckets for recovering tin ore. This dredge was designed and built by the Bucyrus Company of South Milwaukee, Wisconsin, U.S.A., S. H. Thurston of London Consulting Engineer for the East Asiatic Company, and has the distinction of being one of the first two electrically operated tin dredges built on this peninsula.

A hydro-electric power plant, consisting of a 500 K.W. generator set and Pelton water wheel, furnishes power for the dredge over a transmission line four miles long.

The property is located about sixty miles from the mouth of the River Kopah, and the dredge was transported to the site by means of shallow draft barges and native boats. As part of the dredge had to be transported during the dry season when the river was very low, some difficulty was encountered, but this was



LAUNCHING THE DREDGE

minimized by the dredge being sectionalized to meet this situation by the builders.

The dredge will dig to a depth of 30 ft. below the water level of the paddock when the ladder is at an angle of 45° and the bucket chain has an approximate speed of 55 ft. per minute when working under normal conditions.

The pontoon, of heavy steel construction throughout, is 115 ft. long by 45 ft. wide and 10 ft. deep, and is stiffened by longitudinal plate girder trusses between decks the entire length of the hull. These are the continuation of the well hole plate and additional strength is given by three water-tight transverse trusses between decks and form part of water ballast tanks which can be used, if necessary, to regulate the trim of the dredge when operating. The upper tumbler and drive are carried on two longitudinal overhead trusses of very heavy construction that extend from bow to stern on each side of the well.

The tin saving sluices are so designed that the concentrate may be removed from any one while the dredge is in operation, by diverting the supply from the distributor to special sluices provided for this purpose. As the material leaves the screen it is carried forward by the distributor to transverse distributing sluices that feed the main tin saving tables, which, by this arrangement, are carried well forward on the pontoon, thus minimizing liability to change the trim of the pontoon as the material accumulates.

The bucket on this dredge is made in two parts, the combined bottom and hood of special heat treated carbon steel casting with a manganese steel lip. The old type hexagonal lower tumbler has been discarded for one made from a single steel casting with circular tread and flanges faced with manganese wearing plates. The top tumbler has six sides having cast on each face large lugs that give a positive drive to the bucket chain.

All gears are specially heat treated steel castings with teeth cut from the solid and all shafts are made from hammered steel forgings.

The revolving screen is 6 ft. in diameter and 30 ft. long over all, and will be carried by two specially heat treated steel friction tires on three friction rollers, two of which are idlers carrying the upper end of the screen, while the lower one is mounted directly below the screen on a horizontal center line. The screen is held in line transversely by two idler rollers acting against the sides of the lower tire; and one bevel roller acting against a bevel face on the lower screen tire takes the axial thrust due to its inclination. No tailings elevator is used on this dredge, the material rejected from the screen being deposited behind the dredge by means of a chute.

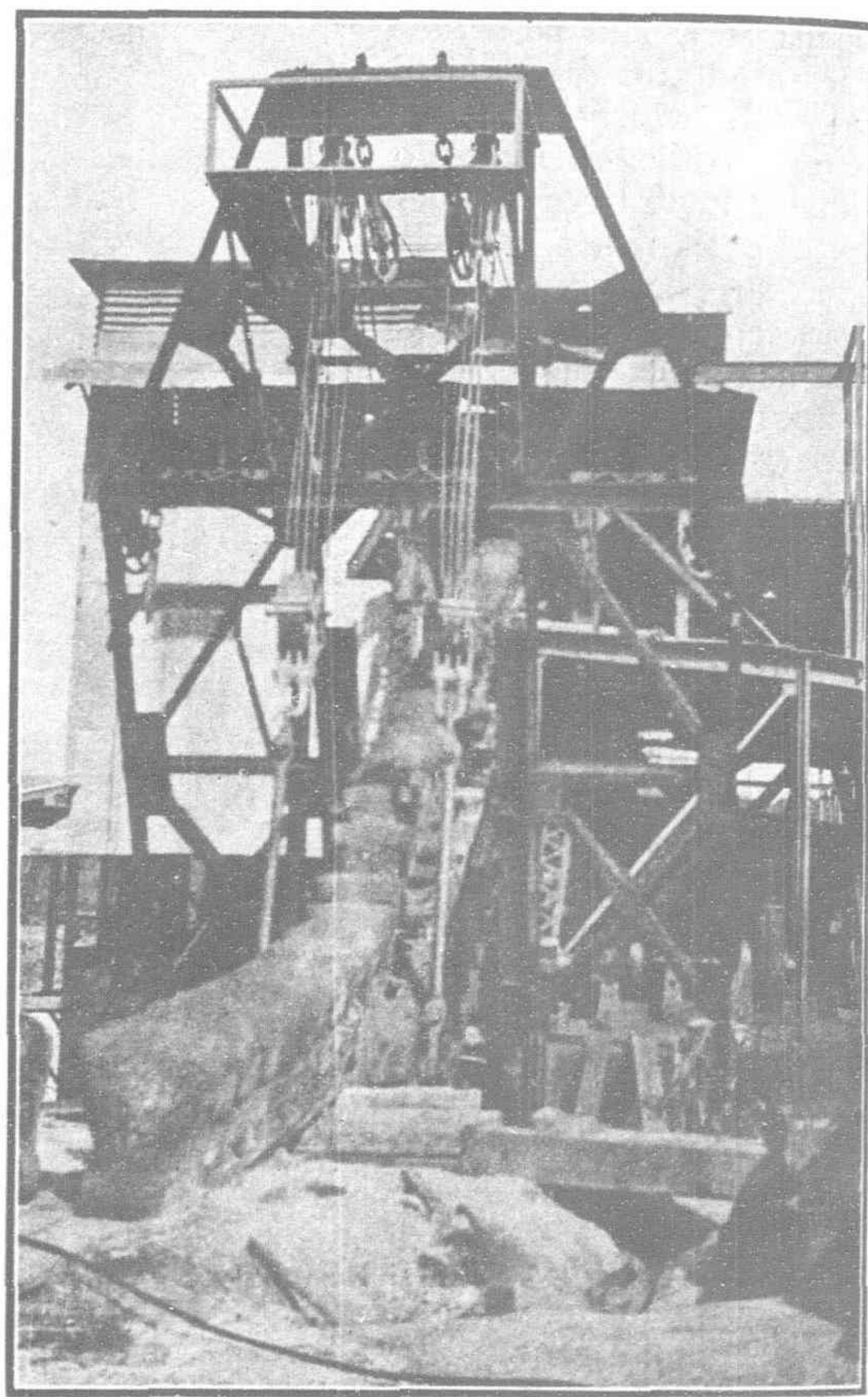
A 14-inch centrifugal pump, with a capacity of 3,750 imperial gallons per minute, delivers water to the screen and screen casing through a series of nozzles coupled to headers by ball joints so that the water may be directed to any point necessary to wash the material thoroughly. A 14-inch centrifugal pump of the same capacity is also used for supplying the sluices and for freeing the dump chute and buckets from sticky clay. A 5-inch high pressure pump is also used and delivers its supply through adjustable noz-



EAST ASIATIC COMPANY'S CAMP

zles, of which two are so directed that they deliver two heavy jets directly into each bucket thoroughly cleaning it as it passes after dumping. The entire water supply is so arranged that the operator has complete control of the flow to the material treated on any part of the dredge.

Both jib and traveling cranes are used in positions that will expedite repairs and renewals to all parts of the machinery.



THE DREDGE IN OPERATION

A head line holds the dredge up to the working face. All clutches and brakes on the ladder hoist, winch, bucket drive, and all winch machinery are operated by hand levers mounted in a lever room or platform located on the starboard side from the winch room and controlled by one man, and in such a position the operator commands a full view of the working face and front of the dredge, also the tin saving tables.

Power is brought on board the dredge at 6,600 volts and transformed to 440 volts. All motors operate on a 3 phase 50 cycle 440 volt circuit. A 110 H.P. 1000 R.P.M. variable speed motor drives the bucket chain. Similar motors drive the various other units.

The East Asiatic Company have erected at the mine a machine shop equipped with the most improved machinery to make necessary repairs. One European winchman, each shift of eight hours, operates the dredge using native labor for all other purposes.

The introduction of the dredge has made it possible to work at a profit large deposits of mineral bearing alluvium that in some cases could not be worked by any other method, while in other

instances it has been found that deposits of gold and tin that failed to show a substantial return when worked in the old pick and shovel method, would be a good investment as a dredging proposition.

Many people look upon mining as a gamble where you put \$2.00 in and get \$1.00 back, and in many cases that is probably so, but that element of gamble in dredge mining is entirely removed. The mining specialist can accurately determine the number of cubic yards of gravel in the deposit and the metal content per cubic yard by means of bores put down in a systematic manner over the area to be dredged.

The same company recently shipped two dredges to the Ural Mountains, Russia, to be used in extracting platinum from the earth, and are now completing one for the Lenskai Gold Mining Company to work in Siberia. This mammoth dredge will treat 400,000 cubic yards of gravel in thirty days, dig to a depth of 80 feet below the water on which it floats, and is operated by six men to each shift and does the work of thousands.

Railways in the Malay States

The working of the railways for the first half of 1917 produced a net revenue amounting to £2,281,066 as compared with \$1,870,518 in the corresponding period of 1916. The total earnings amount to \$6,456,000 as compared with \$5,517,000, an increase of seventeen per cent over the highest figures previously recorded.

No less than \$700,000 of this increase appears under the heading of passenger receipts. The experience of the latter months of 1916 had led us to anticipate a very large increase in this class of traffic which threatened to overtax the capacity of the rolling stock. Passenger fares were raised fifty per cent as from March 1, 1917, and this brought about a reduction of 700,000 in the number of passengers carried, while at the same time the anticipated increase in earnings was exceeded by \$89,000.

As anticipated there has been a very considerable increase in expenditure, but it is satisfactory to note that the ratio of increase over the corresponding period of this side of the account is only 14½ per cent compared with seventeen per cent on the earnings side. The most striking increase occurs in those accounts which include fuel. This one item alone accounts for over \$350,000 of the total increase recorded.

The total revenue expenditure for the half year is \$4,175,000 compared with \$3,647,000 in 1916. In both these periods the amount expended on special services payable from revenue has been exceedingly low, and in the first half of this year only one tenth of the special work for which provision was made in the estimates was carried out.

Stores and materials of all kinds have increased in price very considerably, shipments from Europe have been few, and local stocks have in some cases become so depleted that it has been a matter of great difficulty to obtain certain commodities at any price. The necessity of providing not only for current requirements, but also for the additional rolling stock essential in the immediate future for the maintenance of the transport service has led to an important departure from our usual procedure, and we are now making heavy purchases outside the United Kingdom.

The expenditure on new railways during 1916 was \$2,636,000 and during January to June 30, 1917, was \$963,545.

The length of the line from Alor Star to Siamese-Perlis boundary is 42½ miles, and work was commenced in May, 1915. The work on the whole line is practically completed.

The doubling of line from Bukit Mertajam to Prai was completed in December, 1915, and the line, including sidings and buildings, was handed over to the open lines on the twenty-fourth of last June.

Reclamation of the site of the proposed wharf extensions is in hand.

The work on the section of the East Coast Railway from Tembeling to Kuala Lipis, about twenty-five miles, is practically completed.

The length of the line from Pasir Mas to the Siamese Kelantan boundary on the East Coast Railway is 11½ miles, and work was commenced on February 13, 1917. Good progress is being made with the earthwork, bridges, and culverts, etc. The permanent way has been linked in for four miles.

Motor Road Around Hongkong Island

[BY AMERICAN CONSUL GENERAL GEORGE E. ANDERSON]

Despite war conditions a motor road around the principal portions of the island of Hongkong is in course of construction and the budget of the colony for next year makes provision for its completion. Until about five years ago the chief roads of the colony were constructed to meet traffic conditions represented by sedan chairs and jinrikishas. The single notable exception was a roadway of more pretentious nature, which was constructed around the northwest end of the island from the city of Victoria to the town of Aberdeen on the west coast by a popular subscription as a monument to Queen Victoria at the time of her great jubilee, and it is known as Jubilee Road.

About five years ago, under pressure of the increasing demand for motor cars in the colony, this road was somewhat lengthened, and in the course of the past three years it has been extended to Deep Water Bay, a point on the west coast well toward the southern end of the island. During the past year this road has been extended to a point known as Repulse Bay, farther south along the coast. Next year the road is to be continued under a recognized policy of road construction, which is stated to be the outstanding feature of the budget estimates. It has been suggested ultimately to proceed to Shauiwan on the east side of the island through a deep cutting and over an entirely new road at a much lower level than the existing road.

The completion of this road will be of more than local importance since it will be an important attraction for the many thousands of tourists passing through Hongkong annually. The government is spending substantially a quarter of a million dollars during the coming year on the improvement of existing roads, so as to make them suitable for motor traffic, including a motor road from Kowloon to Castle Peak, on the Pearl River, thence across to Fanling, near the sea, and back to Kowloon—in all, about 60 miles of fine, broad road. This is to be completed next year. The government plans by this means not only to afford increasing means of recreation and pleasure for residents, but also to open up many parts of the colony as residential sites and to develop them as revenue-producing and remunerative works.

Japanese Abroad

Japanese residents abroad numbered 450,773 at the end of June last year, according to figures issued by the Tokyo Foreign Office. This number is an increase of 50,357 as compared to the previous year. The following table shows the number of residents abroad at the end of June, 1917:

	Men	Women
United States	151,606	76,572
Manchuria and Kwantung	60,492	51,766
China and Tsingtao	25,937	21,189
Australia and South Pacific countries	21,441	8,067
Brazil	3,050	2,683
Other States of South America ..	24,235	2,621
Europe	978	130

China's Foreign Trade in 1917

[By F. E. TAYLOR, STATISTICAL SECRETARY, CHINESE MARITIME CUSTOMS]

It may be fairly said that all the impediments to trade noted in the reports for 1915 and 1916 were intensified in 1917. There was a further rise in the value of silver, the average exchange value of the Haikwan tael during 1917 being 4s. 3½d., as against 3s. 3½d. in 1916, which would, under normal conditions, have been expected to stimulate imports and depress exports. While this was no doubt the case to a limited extent, the chief visible effect of the rise in exchange was to cause a great tightness of money, because the temptation to buy gold at favorable rates led to markets being denuded of currency, while emigrants abroad reduced their home remittances to the lowest figure and refrained from ordering their usual quantities of Chinese sundries. The chief factors affecting trade were just those mentioned last year—shortness of tonnage, high freights, rise in prices, and belligerent restrictions. To these must unfortunately be added internal dissensions in China and disastrous floods. It is true that in some directions it is said that the high exchange alone made importations possible, but in others the extreme dearth of foreign articles led the Chinese to revert to their own resources, such as using vegetable oils in the place of kerosene and purchasing very freely cotton piece goods, towels, and underclothing manufactured in their own country. Nevertheless, the war has shown very plainly that the foreign trade of China is no delicate exotic, prone to shrink and wither unless constantly warmed by the rays of prosperity, but a hardy and rapidly growing plant that needs but little encouragement to expand and is ready to adapt itself to the most unpromising circumstances. Take, for instance, the trade in cotton goods, which is the most important section among imports. Everything seemed against the trade: labor shortage and strikes, increased cost of all articles necessary to the trade, and short supply of wood, paper, tin lining, chemicals for bleaching and dyeing, and unheard-of prices for cotton following upon short crops, sending up the price of piece goods to sometimes treble their normal values. Added to these difficulties were high freights and rates of insurance, and the Army Council's Order that no piece goods or yarn, with certain necessary exceptions, may be packed in cases—an innovation to which it was naturally difficult to reconcile so conservative a people as the Chinese. These conditions have been very favorable to Japanese weavers, and they have taken full advantage of the opportunity, and a prominent feature of the year's trade was their exploitation of the Chinese markets and the improvement in the quality of their goods. Therefore, although British and American goods may show a decrease, the deficiency was supplied by Japan, and the Chinese spent over 22 millions of taels more on cotton goods than they did in 1916. Metals alone showed a decline in the value of the importations. It is quite plain that with the establishment of peace abroad and tranquillity within a great advance in trade will be witnessed.

The development of various industries in China must lead to an increasing demand for machinery of many descriptions, and inquiries have been made at the ports for the purpose of ascertaining the kinds most in use at present. For Government requirements machinery is necessary for arsenals, mints, railways, dockyards, and leather factories. Electric lighting is rapidly spreading, and apparatus of all kinds for mining and smelting will be wanted in greater quantities each year. There are in operation numerous silk filatures, and factories for producing cotton cloth, cotton hosiery and underclothing, and cotton thread. Mills for spinning cotton yarn, mills for cleaning rice, flour mills, oil mills, sawmills, and paper mills are to be found in widely separated localities. Works turning out bricks and cement, factories for making candles and soap, glassware and porcelain, are on the increase, while locally made cigarettes are competing seriously with the imported article. Waterworks are being gradually introduced into some of the larger towns, and the use of printing presses is spreading.

The example given by the Japanese in the Kwantung Territory is sure to be followed by the Chinese, and it may be useful to give a list of

the articles being manufactured there, omitting those of which mention has already been made. Among chemical products are olein, glycerine, sulphuric, lactic acid, talc powder, starch, hardened oil, stearine, calcium carbide, sulphate of ammonia, caustic soda, soda ash, and barium products, to which may be added bone dust manure. Surgical instruments, heating apparatus, electric-light bulbs, crucibles, and bicycles are made, and there is an establishment for electric plating. Imitation Panama hats, made of paper, seem to find a ready market. One of the most interesting enterprises, which was alluded to in the report written last year, is the South Manchurian Sugar Refining Company, established at Mukden in 1916. The South Manchuria Railway Company is largely interested in this concern, which has a capital of Yen 10,000,000 and manufactures beet sugar as well as refining sugar from Java. Seeds were distributed among the farmers, and, in spite of unfavorable spring weather, a crop estimated at 400,000 piculs was harvested. As the factory can dispose of 500 tons a day, this was a supply for barely a month and a half. The beet yielded 13 per cent of sugar, which is considered eminently satisfactory. In order to cultivate the taste for beet sugar, which may be difficult in the prospective markets of Manchuria and Shantung, the beet sugar will at first be mixed with cane sugar from Java and Formosa. It is confidently expected that this device will have the desired result and that pure beet sugar will become gradually acceptable. The Chinese, in addition to items noted above, are making albumen and yolk preserves, macaroni, vermicelli, biscuits, canned goods, and sugar; motor engines, printing presses, needles and nails, clocks, slates and slate pencils, lithographic stones, window glass, fire-bricks, tiles, carpets, canvas, woolen goods, straw hats, satin ribbons, organs and clarionets, picture molding, asbestos products, and leatherware. If the Government would encourage these industries, instead of taxing them and making it difficult for their goods to compete with imports of the same nature, their development would be greatly accelerated.

The chief local events affecting trade during the year were the abortive attempt to restore the Manchu régime in July; the declaration of independence by Yunnan, and the constant fighting in the rich province of Szechwan: the notification on the 29th of August by the Russian Customs that the frontier was closed to all imports from China unless covered by special Russian Government permits; and the continued depreciation in the exchange value of the ruble.

The following notes are extracted from the quarterly memoranda on trade received from the ports. Trade in the Manchurian ports was very flourishing and would have been still better but for the shortage of transport facilities and the fluctuations in exchange. On December 2 the exchange value of the ruble had fallen to Shanghai Ts. 100 = Rubles 1,880, which made the copeck worth less than a Chinese cash. Seeing that the rate on the 31st of March was Shanghai Ts. 100 = Rubles 295, it will be evident that merchants were compelled to observe great caution in settling their contracts. The importation of luxuries into Russia was prohibited, but there was a great demand for hosiery, clothing generally, leather boots and shoes, sugar, candles, wheat, matches, and lard. The railway from Seishin to Kainei on the Tumen River was opened to traffic on the 25th of November. It is fifty-eight miles in length and will eventually be connected with Kirin, while its prolongation southwards will link it up with the Korean system, so that the products of Eastern Manchuria will find an outlet in the seaport of Gensan in addition to the port of Seishin. It is probable that a light railway will shortly be built from the Tumen River, through Lungchingtsun, to the Tienpaoshan mines, copper and lead from which were first recorded in the Customs Returns in the June quarter. The increase in the importation of Japanese piece goods, at the expense of American and British makes, was very marked, and Chinese cotton goods found increased sales, especially fancy weaves. The reports from Dairen are always interest-

ing. Preliminary work for the construction of ironworks at Lishan was started, and the plant is under construction in the workshops of the South Manchuria Railway. There was a disastrous explosion in the Oyama pit of the Fushan Colliery, resulting in 997 deaths, and it will be a year before the pit is working again. In the middle of February news was received that the British had prohibited the importation of beans, which brought down the price immediately and caused a few cases of bankruptcy among the Chinese merchants; but the export increased eventually. There was a great demand for bean oil on behalf of America, although freight rose to Gold \$25 per ton in February. The weather was so dry in the early half of the year that there was a serious shortage of water, which interfered with manufacturing industries. The amalgamation of the managements of the Korean Railways and the South Manchuria Railway took effect on the 31st of July and will do away with the constant disagreements regarding the through freight question, the latter company taking over construction, improvement, and maintenance of the permanent way, together with all working responsibilities. The construction work on the Ssu-Cheng Railway was completed and the first trial run over the whole line was successfully accomplished on the 30th of November, only eight months after the commencement of the work. This is a short line of fifty-five miles connecting Chengkiatun with Sze-ping-kai on the South Manchuria Railway. It is a Chinese Government line, but the chief engineer and the traffic manager have been selected from the officials of the South Manchuria Railway.

The revised Kirin-Changchun Railway Loan Agreement was concluded between the Chinese Government and the South Manchuria Railway on the 12th of October. The loan will be for Y.6,500,000 for a term of thirty years, on the security of the railway property and receipts. During the currency of the loan the management will be assumed by the South Manchuria Railway on behalf of the Chinese Government. One of the most important events during the year was the reorganization of the Japanese Government in the Kwantung Territory and Manchuria, which took effect in August. The Kwantung Government is placed under the supervision of the Prime Minister instead of the Foreign Minister and is vested with more active power of control in the business of the South Manchuria Railway. The Consuls in Manchuria, while under the orders of the Foreign Minister, are placed under the supervision of the Governor General of Kwantung. The Colonization Bureau, under the supervision of the Prime Minister, is to attend to matters connected with Korea, Formosa, Saghalien, and the Kwantung Territory, and also to the affairs of the South Manchuria Railway. There was so large a drainage of silver toward Shanghai that the Mukden government issued a ruling that all exports of silver over \$50 in coin or Tls. 50 in sycee must obtain a special permit.

The reports received from the North show that trade was fairly well maintained in spite of the difficulties already mentioned. The floods in Chihli, covering about 15,000 square miles at an average depth of four feet, which followed excessive rains in August and September, are said to have caused damage amounting to \$100,000,000. To this must be added the loss resulting from the impossibility of sowing seeds for the spring crops. Trade naturally suffered under such conditions, but the exports from Tientsin seem to have been well sustained notwithstanding abnormally high freights. Among the Japanese goods that have been introduced in the place of similar articles formerly procured from Europe, and which from their cheapness combined with a marked improvement in quality are likely to preserve their position after the end of the war, may be mentioned paper, cotton piece goods, cotton yarn, and various sundries such as cotton braid, cotton trimmings, imitation gold and silver thread, enamelled ironware, and electrical fittings. Woolens, cotton thread, kerosene oil, aniline dyes, cigarettes, glassware, and needles are all of very inferior quality and are not likely for some time to compete seriously with European and American products. It should be noticed that the Japanese cotton piece goods especially have greatly improved. A very large proportion of the household soap and rubber goods imported from Japan is made by Messrs. Lever Brothers and the Dunlop Company, who have established branch factories there. Licorice root has been in great demand for America, where it is used in the preparation of tobacco and chewing gum. It was, before the war,

obtained from Asia Minor and Persia, but the supply has been interrupted by the military operations in Mesopotamia. The root from Kokonor and Kansu is slightly inferior, but this trade seems likely to persist. Walnut oil is a new export sent to France as a substitute for olive oil, and its genesis is due to high freights, which make the export of walnuts unprofitable. A new import from Japan which has been favorably received is a silk and wood mixture—the warp of silk and the weft of mercerized wood fiber. It is of very attractive appearance, but its durability is doubtful. Ramie fiber is also being mercerized in Japan and is made into artificial silk yarn, to be manufactured into artificial silk piece goods in China. The pongee trade of Chefoo appears to be seriously threatened by competition from Manchuria, where cocoons can be bought more cheaply and where reeling processes are being more scientifically studied. The threat appears to have had the wholesome effect of improving the quality in Chefoo, and the total export was very little short of previous years. It is to be regretted that the pernicious practice of artificially weighting the thread for weaving pongees is said to be on the increase. There was a larger business in hair nets, most for America. The difficulty of obtaining English thread, and the inferiority of Japanese thread used in its place, spoiled the appearance and quality of Shantung laces, but there was a steady business throughout the year. The depreciation of the ruble caused much distress in Shantung, which is in close touch with Manchuria because of the number of emigrants. The prohibition of the export of steel from America drove Japan to search in China for all available scrap iron. The forts of Tsingtau were all dismantled for the sake of the iron, and the purchaser of the sunken cruiser Takachiho has made a respectable fortune. Copper and brass were also wanted in any form. The British-American Tobacco Company have made a great success in planting tobacco in the Weihsien district and in assisting the Chinese farmers to cultivate it in various places. Their chief rivals, the Nanyang Brothers Tobacco Company, have taken a Japanese company into partnership and are attempting to compete on the same lines. The new brewery begun at Tsingtau in the autumn of 1916 has commenced operations, and a silk filature was opened. The latter fact is the more interesting because the company has imported quantities of mulberry trees from Japan, which have been distributed gratis for experimental cultivation. This is likely to lead to an expansion of sericulture in Shantung and to proper methods of keeping the works free from disease. The export of coke increased, as the quality has been greatly improved.

The capture of Chungking by troops from Kweichow and the constant fighting and brigandage had a demoralizing effect on trade and finance. The fear of looting caused silver to be withdrawn from circulation, and the notes of the Bank of China were only accepted at a discount of 47 per cent. The commandeering of vessels for troops interfered greatly with commerce, and bandits who fired indiscriminately at gunboats, steamers, junks, and loot vessels where possible, added to the difficulties of transport. Wanhhsien was opened as a branch office of the Chungking Custom House on the 16th of March and is likely to develop quite a considerable trade, being in a position to tap large and fertile regions of East Szechwan. The principal export has been wood oil (*Aleurites cordata*); but conditions have been too disturbed for general trade. Certain work was done to improve conditions at some of the rapids of the Upper Yangtze; but brigandage and civil war have sadly hampered trade. There were many casualties on the steamers fired at, including Captain Carley of the S. S. Anlan. Large quantities of antimony were shipped from Changsha, but difficulty in procuring freight kept prices down, especially as foreign markets were obtaining supplies from other sources. More tungsten ore was exported, and considerable quantities of lead. Japanese kerosene commenced to make its competition felt. The Canton-Hankow Railway was expected to reach Changsha before the end of the year, but the political disturbances prevented this, and passenger traffic was opened between Wuchang and Yochow on the 1st of September, with, unfortunately, a very inadequate rolling stock. The crops in the Yangtze Valley were generally good, and a large business was done in indigo, which has to a great extent taken the place of the synthetic product, although dyes of Japanese and British make have appeared on the market, the prices of which are lower than were formerly charged for German dyes. The demand from

Russia for cotton yarn sent up the price so much in Japan that large quantities were re-exported at a profit from China. Japanese goods of all kinds made considerable headway, and Japanese white sugar was sold cheaper than the sugar from Hongkong. The rice harvest was excellent, but the export from Wuhu was smaller because a bumper crop in Annam, which could be sold cheaply in the southern ports, and the very high freights from Wuhu interfered with demand. Japan took large quantities of rape seed and rape cake. Chinese cigarettes are everywhere competing with those imported, and it seems probable that all cigarettes consumed in China, with the exception of superior qualities imported for the use of foreigners, will before very long be manufactured in this country. The Texas Petroleum Company has been pushing the sale of its kerosene with great vigor, as has also the Horden Company of Yokohama. The match-making industry was considerably hampered by the high cost of raw materials. It is interesting to record that the ware hyacinth, that has for some few years seriously impeded navigation in the canals and narrow waterways of Kiangsu, entirely disappeared after the severe winter of 1916-17, the roots having apparently been killed by the cold. The same report comes from Chekiang. The plant first appeared in 1911, the year of the revolution, and was named by the Chinese "Yuan Shih-K'ai." At Wenchow the local authorities established an office for testing tea and putting a stop to adulteration with willow and other leaves, a practice that did so much harm to the trade in 1915 and 1916. All tea found to be adulterated is to be burned and the culprits punished.

A complaint comes from Santuao that the raising of the price of salt from \$1.40 per picul in 1907 to \$3.80 in 1917 has seriously checked the salt-fish industry. The competition of kerosene from Formosa has become more marked, as it sells for \$3 to \$3.75 per 10 gallons, as compared with American at \$5.10; Borneo, \$3.75; and Sumatra, \$4. The quality is inferior, and the flashing point is said to be too low for safety. The high silver exchange has checked trade with the Straits, as Chinese firms and emigrants hesitate to remit money to China, and the exports from Amoy show a great falling off in such articles as hemp bags, joss paper, sugar candy, and prepared tobacco. From Swatow comes a report of the closing of several Chinese banks, owing to the shortness of silver. The rice crop was excellent, but the political conflicts and the shortness of tonnage impeded trade. An interesting development due to the war was the export of wolfram. The ore is produced in Swabue, on the coast between Swatow and Hongkong. A quantity was shipped to Hongkong, and there were also shipments to Shanghai for re-export to America. In Hainan some thirty companies are said to have been started to grow rubber, having already planted one million trees between the 19th and 20th parallels of latitude. If the reports are correct, and a certain quantity of rubber certainly has been shipped to Singapore, the island of Hainan, mostly peopled by very backward aborigines, will become of much greater interest, as it will develop quite a considerable commerce. The export of manganese from Pakhoi showed development. On the West River the dearness of coal led to an extended use of liquid fuel by the launches plying on the inland waters, and a large number of boats are now fitted with engines to burn crude oil. In Wuchow a new local industry has arisen, and motor engines for burning liquid fuel are being manufactured from foreign models. A manganese mine with ore of fair quality was opened on the Liuchow River and promises well. Contracts for large quantities of the ore were made with firms in Hongkong. Nanning reports the shipment of wolfram ore. Lead ore was exported for the first time from Lungchow, and a sustained demand from America greatly increased the export of tin from Mengtsz. The prohibition of the export of silver from Hongkong interfered seriously with the trade of the frontier ports. There were bands of robbers everywhere, and caravans had to be organized under military escort. The Japanese have developed a large trade in enameled basins, which were formerly procured from Austria. They are packed in wooden cases containing ten dozen each—a method of packing peculiarly suited to the local conditions. Enameled bowls and spoons are also imported. Needles from the United States are competing with those made in Japan, as the latter break too easily. The requisitioning of pack animals for troops caused great inconvenience to trade.

Revenue

The total collection during 1917 was Hk. Tls. 38,189,429, as against Hk. Tls. 37,764,311 in 1916. As the average value of the tael in 1916 was, as mentioned above, 3s. 3-13/16d. and in 1917 4s. 3-13/16d., this represents an increase in gold of £1,979,993, although the silver surplus was only Hk. Tls. 425,118. This is a striking example of how values are affected by violent fluctuations in exchange and gives some idea of the difficulties encountered by merchants in a silver-using country. This point will stand out again when the total value of the foreign trade is discussed lower down. Under every heading there was a decrease except in import duties, which were better by Hk. Tls. 964,617. Export duties were lower by Hk. Tls. 160,950; coast trade duties, by Hk. Tls. 48,066; opium duties, by Hk. Tls. 28,534; tonnage dues, by Hk. Tls. 128,669; transit dues, by Hk. Tls. 101,921; and opium transit dues, by Hk. Tls. 71,359. The high exchange favored imports and was against exports, which were also affected by belligerent prohibitions, and the scarcity of shipping was naturally followed by smaller tonnage dues. The falling off in transit dues was brought about by fewer goods moving outwards for export. We find, on examining the revenue of the different ports, that the Manchurian ports all collected more than in 1916, and this notwithstanding the difficulties caused by lack of transport (due to shortness of rolling stock on the Chinese Eastern Railway and to the commandeering of carts for troops) and by the fall in the ruble exchange. The chief reason was the demand for Russia, and another important factor was the facility of cheap railway carriage during the winter in regions formerly closed by frost and also the congestion at Vladivostok, which diverted goods for Russia to Dairen. The trade at Kiaochow yielded better returns of both import and export duties, showing an improvement in trade possibly due to the establishment of civil government. Canton, Kowloon, and Lappa improved, as did Mengtsz, Szemao, and Tengyueh, but the revenues of nearly all other ports declined.

Foreign Trade

The value of the direct foreign trade was Hk. Tls. 1,012,450,402, the highest on record, and Hk. Tls. 14,246,043 above the figure for 1916. Reduced to sterling at the average rates of exchange for the two years, the figures work out to £165,587,546 for 1916 and £218,573,277 for 1917, an increase in sterling of £52,985,731. Judging the trade from the tael values, the point of view from which the Chinese merchants regard their transactions, imports were higher than in 1915 and 1916, while exports were lower than in 1916. An examination of the list of imports shows that not only values but quantities were higher, while in the case of exports it will be found that the smaller values on only two articles, tea and sesamum seed, more than cover the deficiency. As special and temporary causes were responsible for the reduced export of these two articles, the statement is justified that the foreign trade of China showed astonishing vitality under most unfavorable conditions.

Imports

The net quantity of Indian opium imported, that is, released for consumption after payment of duty and likin, was 847.31 piculs, all of which was released before the 1st of April. Since that date there has been no business, as all godowns containing opium are under seal. The negotiations between the Chinese Government and the holders of opium regarding the purchase of the balance still unsold, which were alluded to in the report written last year, have not yet materialized. The remaining opium entered in the table—Persian, etc.—amounting to 224.62 piculs, was imported for consumption in the leased territories of Dairen and Tsingtau.

The silver value of the cotton goods imported rose from Hk. Tls. 136,679,386 in 1916 to Hk. Tls. 158,950,267, an increase in sterling of over £11,600,000. In shirtings, sheetings, drills, and jeans the progress made by Japan was very marked, and there was a distinct improvement in quality. Japanese gray shirtings rose from 686,472 to 1,621,525 pieces; gray sheetings, from 1,921,687 to 2,616,284 pieces; drills, from 976,502 to 1,411,451 pieces; and jeans, from 1,251,706 to 1,452,169 pieces. Japanese

T-cloths rose from 743,501 to 915,591 pieces, and Japanese cotton cloth, from 86,148,562 to 106,647,420 yards; cotton blankets, from 350,342 to 663,268 pieces; and towels, from 1,406,109 to 1,612,359 dozen. American sheetings fell from 353,735 to 65,033 pieces; drills from 58,709 to 2,925 pieces; while jeans rose from 755 to 3,573 pieces. The falling off in English goods was not quite so noticeable, the most serious decline being white shirtings, from 3,158,534 to 2,234,926 pieces. Both Indian and Japanese cotton yarn fell off, the latter probably caused by the strong demand from Russia. Plain cotton prints were in favor and rose from 395,549 to 1,497,174 pieces, partly to fill the gap caused by the almost complete disappearance of prints from Russia that had been doing so well of late years. All colored goods seem to have been in greater demand, no doubt because of the difficulty in obtaining dyes. Woolen and cotton mixtures show an increase under every heading, and the trade in woolen goods showed an advance that was hardly to be expected considering the rise in prices; while miscellaneous piece goods also did well. The import of metals was slack. It will be noticed that 14,475,863 cattiees of coffee were imported, of which 9,644,168 cattiees were re-exported to Russia, leaving a net import of 4,831,695 cattiees, as against 829,761 cattiees in 1916; from which it would appear that there are 4 millions of cattiees available for re-export when circumstances permit. The import of flour nearly trebled, and gasoline rose from 685,906 to 1,183,895 gallons. The retail price in Shanghai is \$1.05, but this price is due to want of tonnage to bring the plentiful supplies that are available. Liquid fuel, too, is in greater demand, mostly for motor launches, and the imports rose from 5,183 to 18,261 tons. The competition of locally made matches is shown by the fall in importations from 20,620,717 to 15,594,320 gross. American, Borneo, Japanese, and Russian kerosene all decreased, but Sumatra rose from 19,204,569 to 33,633,346 gallons. Vegetable oils fell from 2,043,864 to 564,162 gallons, and railway materials sank by nearly 50 per cent. Shooks for making casks were imported in greater quantities to meet the increased export of wood and other oils. Hardwood timber increased, but softwood fell away to about a third in consequence of the lack of tonnage across the Pacific. Locomotives and tenders were valued at Hk. Tls. 3,578,114, as against Hk. Tls. 14,186,819 in 1916. The use of motor cars is increasing, and it is to be wished that the Chinese would realize that the provision of good roads for the use of motor traffic would do much to develop the trade now kept back through want of means of communication. The total value of sundries was Hk. Tls. 348,822,886, as compared with Hk. Tls. 336,523,314 in 1916.

Exports

The advance made in the local manufacture of cotton goods is strikingly indicated by the following figures, but it must be understood that the vast bulk of these goods are used in the country and that the export figures give no idea of the real volume of the trade. Gray shirtings have risen from 260 pieces in 1915 to 21,504 pieces in 1917; sheetings, from 2,494 to 38,806 pieces; drills, from 3,422 to 38,001 pieces; and native cloth, from 298,148 to 499,553 pieces. With encouragement from the Government, there would be a vast development of this industry. Nearly all metals were exported in greater quantities. Antimony, regulus, and crude, increased by 56 per cent, but the value had declined considerably in consequence of the difficulty of procuring freight and because the European demand was being supplied from Bolivia and elsewhere. The greater part of the export took place early in the year. Copper and all kinds of iron were wanted by Japan and were exported in greater quantities, as were lead ore and tin, the chief demand for the latter coming from America. Bean cake increased by nearly 4 million piculs, owing to the demand from Japan, where other fertilizers were scarce, and there were more orders for beans than the tonnage could cope with. Bricks, tiles, and cement, which are growing industries in China, were exported much more freely, as were bags of all kinds, bran, cereals, egg albumen and yolk, flour, lard, leather, licorice, skins and hides, timber, and tobacco. The increased demand for these articles was partly due to the war, and such fruits, preserves, ginger, rush hats, walnuts, and wax naturally fell away; but the serious shrinkages are to be found among such staples as tea, sesamum seed, eggs, groundnuts, dressed skins, straw braid, and wood oil.

Raw silk showed some improvement in quantity over 1916, the figures being 122,243 piculs, valued at Hk. Tls. 78,262,159, and 125,820 piculs, valued at Hk. Tls. 79,148,603. In terms of gold this meant an increased value of £4,104,479. In the South the year opened with a moderate demand for Europe and America, and by the end of April the stocks of old silk were exhausted. The new season commenced on the 1st of May with a poor demand, but, as the first three crops were short, dealers were able to maintain prices. In July and August an active demand from America caused a rapid rise in prices, and during the same period there were steady inquiries from Europe. The American requirements led to great speculation in Japan, which reacted on the Chinese markets and forced prices to a level where business became impossible. Towards the end of the year the American market appeared satisfied, and the moderate demand from Europe alone kept prices from collapse. In the districts serving Shanghai the cocoons were dearer, although the quantity offered was greater than in 1916. It had been expected that the favorable weather conditions would have resulted in fine quality, but it was found that the farmers had made no improvement in the defective methods mentioned in the report written last year, and the quality was actually inferior. High exchange and scarcity of tonnage had an adverse influence on the trade, and it is surprising that the exports were so good. During the early month of the year there was a good demand for steam filatures, and the balance from 1916 was speedily disposed of. Silver prices throughout the year ruled considerably lower than in 1916 and during the last few months declined appreciably. The high exchange, however, made the gold prices higher. White native reels were in good demand during the first half of the year, and prices were somewhat high, but the collapse of the market in Japan caused American buying in China to cease, and, with the exception of a small business for Europe, there was little doing during the last few months. In yellow silks the business with Bombay was not so good as in 1916. Some of the crops of these silks, notably in Szechwan and Shantung, were short, and internal disturbances made transport extremely difficult and unsafe. Prices were thus sustained. The market deterioration in the native-reeled yellow silks for Bombay unfortunately continued and is said to be due to more of the best cocoons being taken up for steam filatures, for which the demand in Europe is increasing.

As regards wild silk, a long drought caused great anxiety to farmers raising cocoons, as silkworms fed through dry months are apt to succumb to disease if they encounter wet weather in their mature stage. This actually occurred, but the general conditions proved excellent, and abundant seed cocoons were raised and disposed of. There was a pronounced increase in the activity of the wild silk industry, and there were 4,544 reel stands in Manchuria for producing filature silk, as against 2,590 in operation in 1916. It is now evident that Antung has become a center where production, which will be regulated by foreign demand for silk to be manufactured into pongee for America, is growing rapidly, and merchants who have hitherto been engaged in the business in Chefoo are acquiring sites for filatures at Antung, where the quotations for the best quality wild silk reached the highest point recorded. In Chefoo the production of the finer qualities was about the same as in 1916, but there was, unfortunately, a large quantity of short and inferior pongee turned out in the early part of the year. The export from Chefoo was 3,500 piculs short of the previous year, but the trade appears to have been profitable to all concerned. It remains to be seen whether the farmers in Shantung will realize that their trade will be more and more diverted to Manchuria, unless their cocoon crop is increased and properly handled and reeling methods are improved.

The most important factor in the quality of the tea crop in China is the weather, and seasonable rains and sunshine combined to make the black teas of 1917 memorable for exceptionally fine quality, in striking contrast to the more or less rain-damaged supplies of 1916. Unfortunately for the Chinese teamen the demand, owing to British prohibition of import and to the disturbed conditions in Russia, as well as to the growing competition of Java teas, was so restricted that they incurred serious losses, fortunately not so serious as in 1916. The losses over the first plucking led to the second and third crops being reduced, and the total black tea crop brought to the Hankow market was seven million of pounds

less than in the previous year. It appears that Java teas are making their competition unpleasantly evident, and as they offered good value and as ample facilities were provided by the Java-China-Japan shipping line for transport to Shanghai and on to Vladivostok, Russian buyers naturally turned their attention to the more convenient source of supply. American buyers also largely increased their purchases in Java. The prices paid by exporters for the finer teas, such as Keemuns and Ningchows, were in silver about 10 to 15 per cent lower than in 1916, while what are known as "Hankow" teas were purchased at prices from 15 to 20 per cent lower. Green teas did not prove profitable to Chinese dealers, except those from the Pingsuey and Hoochow districts. The removal by the British Government of the prohibition to ship tea to London for transshipment to Morocco caused a demand to spring up in Shanghai at good prices, but the lack of shipping facilities to England caused the buying to be spasmodic only. The cutting off of the Russian Central Asia demand has left large stocks of costly hysons in the hands of the dealers, on which they will probably lose heavily. Pingsueys and Hoochows are dependent on the American market, and were fortunately disposed of without loss.

At Foochow the season opened late, and there was little tea shipped before July. The chief demand was from Russia, but there was much difficulty in obtaining tonnage. The competition of Java lessened the demand from America, and shipments to Australia and New Zealand were very restricted, due to an embargo in the former Colony and to very high import duties in the latter. The result was a large balance in the hands of the dealers still unsold at the end of the season, mostly fine teas of the first crop, and the Chinese are reported to be losing heavily. Green teas were secured at prices 15 to 20 per cent cheaper than in 1916. The falling off in the quantities exported as compared with 1916 was: black tea, 175,956 piculs; green tea, 102,635 piculs; brick tea, 116,549 piculs; and tablet tea, 18,752 piculs. The total of all kinds of tea exported was only 1,125,535 piculs, the lowest recorded since the trade was developed and particularly disappointing for a year of fine quality. It is interesting to hear that the old-established Chinese firm, the Him Shun On Company, has floated the China Tea Company for the purpose of growing and manufacturing tea on modern lines. The company is said to have acquired large tracts of land in the Ningchow district in the Kiangsi province and to have built a factory equipped with machinery that has been carefully designed, through a course of experiments, to turn out tea that will appeal to foreign taste. The idea is to advertise this absolutely pure Chinese tea, free from all adulteration with Indian or Ceylon leaf and made under strictly sanitary conditions, by putting it up in suitable packages. The times are not favorable for starting the enterprise, but it is to be hoped that the new departure may revive the demand for a product that is less deleterious than its much-advertised competitors.

Shipping

The total tonnage entered and cleared was 86,907,049 tons, or 1,113,052 tons less than in 1916. This does not appear at first sight a drop of much importance, but even in 1914, when the tonnage amounted to 97,984,213 tons, great difficulty was experienced in finding accommodation for the cargo offering, and freights had risen in consequence. The shipping table gives the total of the tonnage entered and cleared at the Custom Houses and includes the coast and river traffic, and there were only 22,125,945 tons available for foreign trade. From this must be deducted the tonnage plying between Hongkong-Kowloon and Macao-Lappa, viz., 3,374,761 tons, leaving only 18,751,184 tons for carrying imports and exports between China and foreign countries, which is about 2 millions of tons less than in 1916. This amount of tonnage is quite inadequate, and the scarcity, combined with high freights and heavy war risks, places trade under great restrictions. British tonnage showed a decrease of 2,264,356 tons; French, of 11,346 tons; Norwegian, of 161,868 tons; Russian, of 115,885 tons; and Danish, of 64,496 tons. There was an increase in American tonnage of 325,242 tons; in Italian, of 13,933 tons; in Dutch, of 248,444 tons; in Japanese, of 347,812 tons; and in Portuguese, of 69,960 tons. That conditions were profitable to shipowners was

shown by the fabulous prices paid for the few vessels that were parted with.

Treasure

The net import of gold, as recorded at the Custom Houses, was valued at Hk. Tls. 8,847,203, and the net export of silver amounted to Hk. Tls. 20,983,098. In 1916 the figures were Hk. Tls. 11,800,849 and Hk. Tls. 28,678,126 respectively. The silver was mostly sent to India, while almost all the gold came from Japan in the shape of coin. America sent Hk. Tls. 7,556,833 in silver and Hk. Tls. 100,000 in gold. The movements between China and Cochin-China about balanced. The violent fluctuations in the price of silver during the year, ranging from 35-11/16d. per ounce in March to 55d. in September, caused considerable embarrassment to merchants; and, as at the highest rate it became profitable to melt rupees in India, dollars in the Straits, and yen in Japan, because the intrinsic value of the coins was higher than their gold exchange value, it was found advisable in India, Japan, the Straits Settlements, Siam, Great Britain, and the United States to prohibit the export of silver except under license. In China complaints of a scarcity of currency were heard at most of the ports.

Miscellaneous

On the 14th of August China made her declaration of war against Germany and Austria, from which date the payment of the German and Austrian shares of the Boxer Indemnity ceased and the vessels of the two nations lying in Chinese harbors were seized. Chinese labor has been freely exported and has proved a valuable contribution towards the prosecution of the war. The Entente Governments have consented to suspend the payment of the Boxer Indemnity (in the case of Russia to the extent of one third only) for five years and have also consented to the revision of the import tariff to an effective 5 per cent, and with the receipts from the Maritime Customs and the Salt Gabelle both showing such excellent returns the financial situation in China should be quite satisfactory. The unification of the currency, so urgently necessary, has been receiving the serious consideration of the Ministry of Finance, and the fact that reforms formerly disregarded as of no importance are now intelligently discussed and appreciated warrants the expectation that, so soon as a stable Government is established and order and tranquillity prevail, China will make more rapid advance along the path of progress and her commerce become of far greater importance in the markets of the world.

Mindanao Oil

It now begins to look as though Mindanao is going to be one of the great oil producing regions of the Orient. For many years it has been known that a fine quality of oil exists in the Pidatan country in the upper Cotabato Valley. In fact in many places it seeps out of the ground and has been used by the natives for fuel. Some months ago a number of enterprising citizens staked claims in the region and recently joined together and formed the "Pidatan Oil Company."

The Standard Oil Company of New York became interested in the proposition and last week one of the company's most experienced field engineers, Mr. Sheffield, arrived at Zamboanga having come out from New York especially to examine these oil fields. Mr. Sheffield is clothed with full authority to act for the Standard Oil Company and has signed an agreement with the Pidatan Oil Company to make a thorough geological survey of the fields and if he decides that the supply of oil warrants he will immediately begin development work. The Standard Oil Company will bear all the expenses of development, transportation, etc., and the Pidatan Oil Company will receive a certain percentage of the gross output of oil.

In company with Colonel H. Gilsheuser, local manager of the Standard Oil Company and thoroughly familiar with the oil fields, Mr. Sheffield left Zamboanga recently for Cotabato and will go up the river by launch to Pidatan. It will require about two months to make the preliminary survey.

ENGINEERING, FINANCIAL, AND INDUSTRIAL NEWS

RAILWAYS

International C. O. D. System.—Arrangements for conveying parcels and packages cash on delivery have been concluded by the Japan-China Through Traffic Conference, in session in Yokohama. A protocol providing this has been printed and signed, thus closing the 1918 conference.

Through this agreement, a merchant in Tokyo or any other large city in Japan may deliver a parcel to a railway station, with instructions to deliver it to a customer in one of five Chinese cities—Peking, Tientsin, Shanghai, Shanhaikwan, or Hankow.

The railway will pay the import duty charged at the Chinese frontier, will add it to the bill, and in Peking, say, will send word to the consignee that his package is awaiting him at the railway station. By calling at the railway parcel office, and paying the sum, the receiver can obtain his package, closing the transaction. Chinese exporters also may send packages C.O.D. to customers in the chief cities of Japan.

Since packages weighing up to 66 pounds are included in this arrangement, it is expected to do much to stimulate trade between the two countries.

Japanese Railway Profits.—The net profit of the Imperial Japanese Railways for the past fiscal year is estimated at Yen 35,870,000 against Yen 20,450,000 as estimated in the Budget for the same year. The total receipts are Yen 211,150,000.

Manchurian Railway Reform.—General Horvath has notified all the heads of the Railway Department and its agents along the line that the American instructors will now begin to introduce reforms on the railway according to the original arrangement and that, therefore, they are to give them every assistance in carrying out their work.

S. M. R. Loan.—In the money market it is expected that the South Manchuria Railway Company will soon float a new loan of Yen 10,000,000.

Tokyo Subway Planned.—Underground and overhead railways for Tokyo have been on the tapis for years, and until the first sod is turned or the first iron stanchion erected it will be wise not to reckon optimistically on any speedy relief of present street-traffic conditions. Still it is a fact that the prefectural government has sent in to the Imperial Government railways a formal application for permission to begin work on an underground line from Shinagawa to Asakusa, a distance of about seven miles. An optimistic reporter states that it is hoped to begin work towards the end of this month. Three years is the period put for the completion of the work. Such a line would be a boon to Tokyo, but it must not be forgotten that in a few years it will be possible to travel on the Government railways across the city. The linking up of Tokyo Station with Ueno will go a long way to relieve traffic, but the completion of the Government line would not render less necessary an additional system that will relieve the surface cars of their present

enormous traffic—which greatly increases with each passing year. Therefore, although we are not over-optimistic, having before heard of the projected railway scheme, it is some satisfaction to know that this time the prefectural government, and not merely private individuals, are interested in the underground railway.

Chinese Railway Collision.—At about 8 p.m., April 2, at a place named Pemashan (White Horse Hill) just south of Tsinan, two freight trains on the Tientsin-Pukow Railway collided, and the impact resulted in the destruction of one engine and five freight cars, the total loss (including goods), being estimated at about \$1,500,000. Ten persons were killed, all of whom were employees of transport companies conveying the cargoes during transit. The express train from Tientsin to Pukow was delayed at Tsinan for fourteen hours owing to the line being blocked.

Railway for Mongolia.—It is reported that negotiations are on foot for a loan for the extension of the new Supingkai-Chengchiatun Railway from Chengchiatun, Manchuria, to Kailu, in Eastern Mongolia.

The Supingkai-Chengchiatun line, which was constructed by means of a loan from the Yokohama Specie Bank, is now considered as completed, construction trains carrying passenger cars are running on a regular published schedule between Supingkai and Chengchiatun, though over a wooden bridge across the Liao which will be changed to steel before the road is considered officially finished. The proposed extension into Eastern Mongolia is 130 miles in length, and it is said that 1,500,000 yen (roughly, \$750,000 U. S.) will build it. According to the agreement under which the Supingkai-Chengchiatun Railway was built, the Yokohama Specie Bank must be given first chance to advance any funds needed for extension of line. The new loan will probably be 2,000,000 yen (\$1,000,000).

The extension of this railway into Eastern Mongolia was contemplated from the first, as Japan is anxious to get into railway communication with that comparatively undeveloped country. The charter of the Oriental Development Co. has recently been amended in order to make it freer to advance money for industrial developments in Eastern Mongolia as well as in Manchuria.

Japanese Elevated.—The newly constructed line between Yokohama station and Sakuragicho station was opened to traffic April 1, facilitating the electric train service to Tokyo.

With the completion of the new elevated section the two express trains operated each morning and afternoon between Tokyo and Yokohama will be taken off, additional trains will be run in, the intervals between trains being from fifteen to twelve minutes.

The express train did not stop at Tsurumi, Kawasaki, Kamata, and Hamamatsu stations, but under the new regulations all Tokyo-Yokohama electric trains will stop at all stations. The new trains leave Sakuragicho at the following time: morning, 6.56, 7.01, 7.25, 7.38, 7.55, 8.23; afternoon, 4.26, 4.33, 4.56, 5.03, 5.28.

Shanghai Tramways.—The following is the traffic return of the Shanghai Tramways (Foreign Settlement) for the month of March, 1918, and for three months ended March 31, 1918, with figures for the corresponding periods last year:

	March, 1918.	March, 1917.
Gross Receipts ...	\$136,701.22	\$130,277.86
Loss by currency depreciation ...	30,914.09	29,833.37
Effective Receipts	\$105,787.13	\$100,444.49
Percentage of loss by currency depreciation... ..	23.95	24.28
Car Miles run ...	335,448	339,741
Passengers carried	6,210,609	5,893,199
	3 Months ended March 31, 1918.	3 Months ended March 31, 1917.
Gross Receipts ...	\$400,440.02	\$387,157.75
Loss by currency depreciation ...	86,489.75	87,270.86
Effective Receipts	\$313,950.27	\$299,886.89
Percentage of loss by currency depreciation... ..	22.88	23.88
Car Miles run ...	975,355	975,975
Passengers carried	18,118,624	17,383,857

SHIPPING

Hongkong Takes Dutch Ships.—The Hongkong Government at the end of March took over five Dutch steamers, aggregating 28,151 tons.

Japanese Charter Rates.—The surprisingly high charterage of boats for the American service of Y.41, asked as a result of the recent shortage of the space on that service, has been raised. Now Y.45 is the rate quoted by the Nippon Yusen Kaisha, the Tokyo Kaiun Kaisha, and the Taiyo Kaiun Kaisha for the following three boats newly built by the Nippon Kisen Kaisha of Kobe and which will be offered to America in exchange for steel:

Hashun Maru, 3,100 gross tons, for service between Hokkaido and Yokohama, Y.41, charterer the Tokyo Kaiun; new boat of Nippon K. K. 6,800 gross tons, single service, delivery July and August, charterer the N.Y.K.; new boat of Nippon K.K. 2,000 gross tons, single service, delivery August and September, Y.45, charterer the Taiyo Kaiun.

Chinese Cruiser in Vladivostok.—The Chinese Cruiser Haiyung joined the British, American, and Japanese war vessels in Vladivostok, April 17.

Dutch Ships in Manila.—Within a few hours after the receipt by local authorities of a radio containing instructions to take over in the name of the United States government all Dutch boats within Philippine jurisdiction,

the navy in Manila assumed control of three ships flying the flag of Holland, the Tjikembang, the Tjisondari, and the tanker Poseidon. The last-named steamed into port from Java shortly after the noon hour, and naval guards were immediately placed upon her. The two vessels first mentioned were taken over early in the morning. The Dutch officers of the vessels and the passengers aboard them are lodged at the Manila Hotel at government expense, and will remain there until they can arrange to return to their homes or to continue their journeys.

Loss of Colombo Maru.—As already reported, says the *Japan Chronicle* of March 26, fire broke out on board the Nippon Yusen Kaisha Colombo Maru, 4,587 tons, near the Danjo Islands, off Goto, Hizen province, Kiushu, on March 22 at 6 p.m., while the ship was en route from Moji to Batavia as the pioneer of the new South Seas line inaugurated by the Nippon Yusen Kaisha.

The flames subsided, but on the morning of March 23 again burst out and assumed serious dimensions. The Seifuku Maru, which happened to be passing, took over the crew of the Colombo Maru, and tried to tow the vessel to Nagasaki. The attempt was hopeless, however, owing to the rapid spread of the flames, which had completely destroyed the stern of the vessel by about 11 p.m. on March 23. At one o'clock the following morning the bridge was destroyed, and an hour later No. 2 hold burst into flames. It thus became impossible for the Seifuku Maru, to salvage the Colombo Maru, and she left for Nagasaki, leaving the burning steamer to her fate.

The Colombo Maru carried 5,200 tons of cement, matches, bricks, zinc, and carbide. It is believed that the outbreak was due to the spontaneous ignition of the carbide.

Chinese Plan Sailing Ships.—The dearth of steamer tonnage has become so pronounced recently that the movement of native produce has been retarded to an unbearable extent. Freight has also increased so much that it has almost proved prohibitive to ship such cheap commodities as oil, beans, etc., to the markets in the provinces. The Nungshangpu has suggested to the merchants the advisability of multiplying sailing ships to tackle the China coast trade. Two Shanghai merchants, Mr. Wang and Mr. Hsu, considering this plan feasible, are trying to promote a sailing ship company, to carry cargoes, and to charter two iron steamers from an American shipowner to cater for passenger traffic.

Concrete Ships.—Jardine, Matheson & Co., and Butterfield & Swire of Shanghai have ordered three concrete boats, of 8,000 tons, four of 5,000 tons and two of 1,500 tons according to a report from Nagasaki.

The report of experimental work upon concrete ships of light tonnage at Saigon has also reached Shanghai.

Bolsheviki Take Amur Ships.—The Bolsheviki have commandeered 123 steamers and 300 freight boats in the Amur valued at 95,000,000 rubles, according to a report from Harbin dated April 5.

First into Newchwang.—The s.s. Kunglee, owned by the Chingkee Co., was the first steamer making the port of Newchwang for the new season. She arrived there from Lungkou at 10 a.m. on March 21, having on board 370 Chinese coolies and some general merchandise. She was followed by the s.s. Shengking, Messrs. Butterfield and Swire, agents, which put in that port at noon on the same day.

Japan's Losses.—Fifty-five Japanese ships totaling 193,249 tons, have been lost since the beginning of the war, according to the most recent figures. These figures include shipping of more than 100 tons.

Since January 1 the Tosho Maru, 3,038 tons, the Daiten Maru, 4,555 tons, have been sunk by German submarines. The Anshu Maru, 3,435 tons, was wrecked off the coast of Formosa.

High Freight to London.—The Nippon Yusen Kaisha will make two advancements of freight rates on the London-Liverpool service via Panama. The first advancement will be applied to the Tottori Maru which will be dispatched for London early in May. The second advancement will apply to the next boat, which is not yet named, and to later boats, as follows:

Descriptions	Present freight	1st Advmt.	2d Advmt.
Metal goods ...	\$455	\$500	\$ 700
Grass... ..	415	450	500
Oils	378	500	1,000
Rice	355	520	600
Seeds... ..	606	900	1,000
Starch	398	650	1,000
Grocery	455	600	800
Wax	436	500	600

The Nippon Yusen Kaisha and the Osaka Shosen Kaisha which were reported to have agreed to advance the freights for the Hongkong, Singapore, and Indian services from May 10 as follows state that the increase and date have not been decided on. The reported increase follows:

Destination	Present freight	New freight
Hongkong ...	Y.12 per ton	Y.15 per ton
Singapore ...	26 "	30 "
Colombo ...	38 "	45 "
Bombay ...	40 "	50 "
Rangoon ...	38 "	43 "
Calcutta ...	38 "	43 "

N. Y. K. and O. S. K. Marseilles Service.

—The Nippon Yusen Kaisha, following the inauguration of a service to Marseilles by the Osaka Shosen Kaisha, has newly chartered two steamers for the service between Port Said and Marseilles. To increase the vessels operated east of Port Said, the Nippon Yusen Kaisha has now chartered the Keishin Maru, 6,500 tons, at Y.35 per ton for one year. At the same time the Osaka Shosen Kaisha has chartered the Kenkon Maru VIII., 7,600 tons, at Y.37 per ton for one year for the service east of Port Said. She is to be delivered in April. This charter transaction is of particular interest in view of the rumor that the Osaka Shosen Kaisha will divide the Marseilles line into two at Port Said,—that is, one group of steamers is to be operated east of Port Said and another between Port Said and Marseilles. Under the present arrangement the Osaka Shosen Kaisha vessels are to proceed to Marseilles, starting at Japan ports up to the third steamer but thereafter at Bombay, with transshipment of Japan cargo at that port. To increase the vessels east of Bombay, the Osaka Shosen Kaisha has chartered the Inabo Maru, 5,800 tons, at Y.34.50 for one year, to be delivered in April.

Coastwise Freights.—Owing to the demand of the Allied countries for Japanese steamers, the Nippon Yusen Kaisha, the Osaka Shosen Kaisha, and other shipping firms have begun to charter many vessels. Consequently, not only the charterage, but also rates of freights have become steady, and the Moji-Yokohama coal freight rate has been quoted at Y.7 and the Dairen-Yokohama bean cake freight at 95 sen.

The selling prices of steamers have also risen. The Taisho Kisen Kaisha paid Y.570

per ton in buying a new steamer of 2,300 tons to be delivered in July.

The Uchida Steamship Company paid as high charterage as Y.30 for the Shimmei Maru, 3,750 tons, May delivery on one year contract, to be employed in service east of Rangoon.

United States Collier to Manila.—The United States Army Collier No. 1, just completed by the Shanghai Dock and Engineering Co., Ltd., left Shanghai April 16 for Manila, where it will go into the American government service. The collier was in charge of Captain A. S. Malcolm and Captain Chapman Leach, the engine room being in charge of Engineers Gilchrist and Askeland.

The completion of Collier No. 1 marks a new stage in United States Army appurtenances. As already stated in a previous issue, it was built for the Quartermaster's Department, United States Army, for service in Manila Harbor. It is designed to carry about 6,000 tons of coal and is fitted with four independent steam driven movable sets of coal elevating gear, each capable of elevating 150 tons of coal per hour, so that fuel can be transferred to the bunkers of the various ships controlled by the Army Department in the quickest possible time and with the minimum amount of labor.

Increase in Indian Freights.—The Bombay Conference, consisting of the P. & O. Company, the Nippon Yusen, and the Osaka Shosen Kaisha, has decided to raise freights on all goods from Japan to Hongkong, Singapore, Colombo, Bombay, Rangoon, and Calcutta by 15 to 25 per cent from May 10.

The following table shows the present and the increased rate on general cargo:

Destination	Present	Increased
Hongkong	Y.12	Y.15
Singapore	26	30
Colombo	38	45
Bombay	40	50
Rangoon	38	43
Calcutta	38	43

Sale of Canton Craft.—Hongkong papers report that the well-known river steamers Paul Beau and Charles Hardouin, which have been on the Hongkong-Canton run for the past thirteen or fourteen years, have been taken off the run.

It is reported that they have been sold for the large sum of \$1,200,000. The ships, which were specially built for the river trade, are to be reconstructed as sea-going vessels capable of carrying about 1,000 tons of cargo each on a draught of about twenty feet.

Both ships are steel twin-screw steamers of 1,671 tons gross. They were built at Nantes (France) in 1903 for the Messageries Cantonaise and then traded under the French flag between Hongkong and Canton until 1913 when they were sold to Chinese and have since been run under the Chinese flag, under which they will continue to be navigated, for it is understood they have been purchased on behalf of General Lung Chi-kuang who is engaged, under orders of the Government of Peking, in military operations against the Southerners.

American Import Ban.—An official message received by the Tokyo Foreign Office April 8 from New York states that American licenses for the import of the articles included in the first list of American Embargoes will be no good unless the articles concerned are shipped actually before or on April 15.

Importers are also required to present to the War Trade Bureau in Washington the duplicated copy of bills of lading which will testify to the actual loading of the articles to be imported before or on April 15.

The bills of lading thus to be presented are required to be endorsed by the American Consuls at the ports of loading if the cargo be loaded between April 12 and April 14.

These new requirements have been promulgated by the American War Trade Bureau under date of April 5 in Washington.

Toyo Kisen Kaisha Profits.—The Toyo Kisen Kaisha's net profit for the past six months is reported to have amounted to Y.17,000,000 including the proceeds of its sale of ships. The distribution of this big profit will be made at its semi-annual meeting of shareholders in the Tokyo Chamber of Commerce Thursday, March 28.

Japanese Subsidies in 1917.—The subsidy granted to Japanese shipbuilders during the financial year 1917 by the Tokyo Department of Communications under the regulations for the encouragement of the shipbuilding industry amounted to Y.5,210,823 in all, showing an increase of no less than Y.2,089,253 as compared with the amount granted during the preceding year.

The grant was distributed as follows:

Shipyards	Subsidy
Mitsubishi	Y.1,029,055
Kawasaki	1,641,411
Osaka Ironworks	1,340,922
Ishikawajima	191,893
Ono	46,816
Uraga	614,649
Fuji-Nagata	47,826
Harima	51,794
Matsuo	63,912
Asano	182,545

FINANCE

Bank of Taiwan.—The Bank of Taiwan is said to have drafted a new plan of increasing its capital in view of its increasing responsibility as financier of foreign trade in China, the South Pacific, India, and elsewhere and of industries in Taiwan.

The new plan is not yet fully ripe, but it is understood that the increase will be Y.20,000,000, which makes the total capital Y.30,000,000. The new shares representing the increase, however, will not be offered to the public, but assigned to the original shareholders of the bank.

This new departure has been, it is said, necessitated by the increased demands on the institution from merchants dealing with China, the South Pacific, and other parts as their financial supporter and also the increasing responsibility of the bank as issue bank in Taiwan on the passage through the Diet of the new amendment to the Bank of Taiwan Act which has increased its fiduciary issue from Y.10,000,000 to Y.20,000,000. At important commercial points in the East the bank now has over thirty branch offices, and the bank's need of funds is increasing quite apace.

Company Promotion.—The amount of capital allotted for the promotion of new companies in Japan during March was Y.192,078,000, which is a gain of Y.72,332,500 on the preceding month, of Y.104,018,000 on the same time last year, and of Y.149,108,000 on the corresponding period of 1916.

On the other hand the capital called into use for the extension of old concerns was Y.57,603,000. This figure was an increase of Y.15,513,000 on the same time last year and of Y.17,582,500 on the same time of 1916, but a decline of Y.53,484,000 from the preceding

period. The enlargement of capital was effected by companies by calling for stock capital rather than by new issuance.

Calls for stock capital were Y.47,703,000, which figure was a decline of Y.38,884,000 from the preceding month, although it was an increase of Y.11,413,000 on the same time last year and of Y.15,177,500 over the corresponding period of 1916. The month's new issuance was only Y.9,900,000. The figure was such a heavy decline as Y.14,600,000 from the preceding month. Even in comparison with the same time of last year and 1916 the gain scored is quite small, being Y.4,100,000 and Y.2,405,000 respectively.

Following shows the nature of the month's promotion:

	New cos. (In thousand yen)	Old cos.	Total
Banking	Y.2,000	Y.13,880	Y.15,880
Trust and financial	9,830	...	9,830
Spinning	1,000	1,500	2,500
Electricity	4,050	5,575	9,625
Gas.....	...	...	...
Mining.....	19,050	250	19,300
Fisheries	...	...	...
Rails and trams	28,500	50	28,550
Shipping	11,850	570	12,420
Insurance	6,000	4,000	10,000
Warehousing	650	...	650
Manufacturing..	66,718	11,940	78,658
Commercial and sundry	42,430	19,838	62,268

Japan's Revenues.—Japan's State revenue for the past fiscal year as entered up to the close of March comes up to Y.803,948,400.544 against Y.584,379,449.565 of the preceding fiscal year as reported at the same date of last year, there being such a huge increase as Y.219,568,950.979. The fiscal year ends May 31.

The bulk of the revenue comes from the Ordinary Account, but the Extraordinary Account contributes more than that to the increase registered. The total of the Ordinary Account is Y.500,658,001.195 against Y.415,805,327.815 of the same time last year, there being an increase of Y.84,832,673.380.

The total of the Extraordinary Revenue is on the other hand Y.303,290,399.349 against Y.584,379,449.565 of the same time last year, bringing up the increase in this section to Y.134,716,277.599.

Postal Savings.—The Department of Communications reports that at the end of March Japanese postal savings banks had 17,511,847 depositors, their deposits being Y.438,109,535. Compared with the preceding month there was an increase of 204,277 in depositors and Y.6,513,024 in deposits.

War Insurance.—The Japanese Wartime Marine Insurance Bureau reports that during the opening ten days of this month the bureau issued policies covering 3,522 risks worth Y.107,031,055. The receipt of premiums during the period amounted to Y.1,240,084.

F. M. S. Prosperity.—From a financial statement published in the Federated Malay States Government *Gazette* it would appear that during the first nine months of 1917 the F.M.S. invested about \$14,500,000 in British War Loans—making about 30 millions in all so invested up to that date. The presentation of a dreadnought to the British Navy, a cash gift which may ultimately reach the best part of \$2,000,000 with more to go, is no mean help rendered by these small States with a population of little more than a million, says the *Malay Mail*.

Peking Customs.—The Peking Octroi has regulated the tariff on sugar as follows: candy \$4.20 per picul, white sugar \$3.60 per picul, brown sugar \$3.10.

Japanese Currency.—A report issued by the Finance Department yesterday states that at the end of last month Y.54,738,301 worth of gold coins, Y.125,644,975.60 worth of silver pieces, Y.18,692,435.042 worth of copper pieces, Y.35,153,000 worth of small paper notes, and Y.770,087,336.41 worth of bank notes were in circulation, thus making the total Y.1,004,316,048.042, a reduction of Y.35,824,306 from the end of the preceding month.

Japan's Gold Holdings.—A report from the Finance Department dated March 15 places the gold holdings to the account of Japan at Y.1,064,000,000, an increase of Y.8,000,000 over the close of February. However, this gain is not an actual addition to the specie reserve at home which has fallen off by Y.1,000,000.

Shanghai Gas Dividend.—The directors of the Shanghai Gas Co., Ltd., decided to recommend payment of a dividend for 1917 of Tls. 2.50 per share, being at the rate of five per cent on the paid-up capital, and that Tls. 140,365.19 be written off for depreciation of plant and buildings, that Tls. 80,000 be transferred to renewals and depreciation account, and Tls. 30,433.59 carried forward to next account.

Yangtze Insurance Divided.—At the ordinary general meeting of shareholders of the Yangtze Insurance Association, Ltd., held April 29, the directors recommended that the balance at credit of 1916, Working Account be dealt with as follows:

The payment of a dividend of 25 per cent (\$15 per share).

The transfer of \$200,000 to the Investment and Exchange Reserve Fund.

The donation of £1,000 to the Sailors' War Orphans' Fund and carry forward the balance.

It was also recommended to pay a special dividend of five per cent (\$3 per share) out of interest earned during 1917.

Bank of Chosen.—The Bank of Chosen is contemplating the doubling of its authorized capital to Y.40,000,000 on the payment of the uncalled for capital this month, apparently in view of the increased importance of the Bank's function in Chosen, Manchuria, and China. The plan will be publicly announced immediately after the bank's shifting to its new building at Yurakucho, Kojimachi-ku, Tokyo, in May.

Reported Currency Loan.—Negotiations are said to be in progress between the Chinese Government and the Industrial Bank of Japan over a loan of Y.30,000,000 which is to be used for the establishment of a new currency system in that country. The Japanese bank will raise the funds required by issuing debentures under the guarantee of the Japanese Government.

Japan's Debt.—A report from the Finance Department states that Japan's national obligations up to the close of March are Y.2,495,744,310.74 against Y.2,500,676,034.30 at the end of February, there being a reduction of Y.4,931,423.56. Of the total, foreign loans are estimated at Y.1,338,783,808.74, which is a reduction of Y.4,921,723.56, the result of 4½ per cent Sterling Bonds having been refunded in London. The total of domestic loans is Y.1,156,960,502, a reduction of Y.10,000. Besides, there is Y.199,997,100 worth of Extraordinary Treasury Certificates.

MINES

Kailan Coal.—The output and Sales of coal by the Kailan Mining Administration for five weeks in March and April are reported as follows:

Week ending March 16	Output	72,698	tons
	Sales	67,142	"
Week ending March 23	Output	70,285	"
	Sales	59,733	"
Week ending March 30	Output	67,988	"
	Sales	54,248	"
Week ending April 6	Output	59,331	"
	Sales	56,079	"
Week ending April 13	Output	61,316	"
	Sales	45,182	"

Japanese Copper Market.—At present there are no large exports of electrolytic copper to Italy and France, but stocks on the market are small, partly owing to the restricted operations of the mines and the suspension of the import of Chinese copper coins for smelting. It is said that though the Furukawa firm has some stocks on hand, the stocks of the Kuhara, Mitsubishi, Fujita, and Sumitomo companies are almost all covered by forward contracts. Holders are uncompromising in their attitude, but there are no eager buyers owing to the expectation that developments in the military situation may lead to the carrying out of an industrial mobilization and a decline in prices. With little business doing, the market is quiet. Quotations stand at Yen 61 for electrolytic copper. It is said that between certain large merchants stocks are changing hands at Yen 66.50 or Yen 60.60.

Tin Quotations.—According to the latest advices received in Osaka, quotations of all sorts of tin have advanced to Yen 200 for Banka (Java) tin, Yen 185 for Singapore tin, and Yen 182 for Hongkong tin. The advance is owing to increased purchases by the United States for war purposes. The reason why the price of Banka tin is the highest is that American purchases have particularly increased in regard to that tin, since its export is unrestricted, while only small exports of Singapore and Hongkong tin are allowed under the British license system.

Shuikou Zinc Mine Loan.—Negotiations for the Shuikou zinc mine loan between a syndicate of Japanese capitalists and the Hunan government in China, which have been going on for some time past, are reported to have been nearly concluded.

The contract will be to supply two million yen from the syndicate to the Hunan government, for financing the administration of the provincial government, and in exchange the Japanese syndicate is to be given the right of purchasing ores produced at the mine. The loan negotiations were first started early last year, and were dropped some time last summer owing to difficulties encountered, but were recently revived. The Japanese syndicate consists of the Mitsui, Mitsu Bishi, and Kuhara companies and a few other mine owners.

South China Tungsten.—The development of wolframite deposits in that portion of the colony of Hongkong known as the "New Territory," i.e., that portion of the colony on the mainland held under the treaty of 1860, has proceeded with gratifying success. Unlike the deposits in Chinese territory, from which most of the wolframite now being shipped to the United States and Europe is obtained and which consists of "pockets" scattered over a large area, the deposits being worked in Hongkong are the actual ore strata or ledges extending indefinitely into the earth.

Six outcrops of tungsten-bearing ore have been located in the area subject to the mining license granted the interests now at work.

Three of these outcrops have been more or less developed and are producing ore running as high as 18 per cent tungsten, the veins being 10 to 18 inches in thickness. It is yet to be determined how deeply and over how much area these ledges extend, but there is every reason to expect a very considerable area of ore at a reasonable depth below the surface of the earth, and it is altogether within the range of possibility that the deposits are among the most important in the world. The syndicate operating the deposits under license of the Hongkong government includes British and American interests, the work being done under the direction of an American mining engineer.

Men in the wolfram export trade report even more extensive deposits of the ore in Hunan province, about four days' journey from Hongkong. They are being investigated by American mining interests.—*Consular Report.*

Japanese Auction Steel.—Mr. Takeshi Shirani, the new chief of the Government Iron Foundry, returned to Tokyo Monday afternoon, to confer with Nakashoji, the Minister of Agriculture and Commerce, as to the affairs of the Foundry. He does not contemplate making changes in the organization of the Foundry.

As for the method of sale of the products of the Foundry, he said it has been decided to sell at public auction. Some complaints may arise but he will make an experiment of it, anyway. The business will come to 50,000,000 yen, as the steel amounts to about 110,000 tons besides 60,000 tons already contracted for.

Fushun Recovering.—Oyama shaft of the Fushun Colliery is now capable of producing some 670 tons or about half the output prior to the explosions of last winter, the daily total output of the colliery being about 6,700 tons. Stocks at Fushun are abundant, there being some 50,000 tons.

At Yentai Colliery, the daily output is about 300 tons, with about 5,000 tons in stock.

Korea's Tungsten.—Last year tungsten was exported from Korea to the extent of Yen 2,088,000, while the exports during January amounted to Yen 77,000. The greater portion of the exports have gone to the United States.

Kirin Iron.—The Kawasaki Dockyard Company is reported to have succeeded in buying two iron mines in Kirin which have been owned jointly by a British businessman and the South Manchuria Railway Company. This is a step to increase the efficiency of its own steel works at Kobe.

Japan's Pig Iron Purchases.—The import of pig iron into Japan during last year amounted to 387,086,509 pounds, valued at Yen 23,848,325, against 278,071,986 pounds, valued at Yen 6,548,957, for 1916. During January this year 18,665,847 pounds, valued at Yen 2,096,679, were imported from all sources.

TRADE AND INDUSTRY

Coconut Oil.—Importers into Japan of coconut oil to be shipped from the Straits Settlements have received intimations from the shippers in Singapore that certain conditions contained in what is known as the "Glycerine clause" had to be complied with before an export license could be obtained. As the particulars relating to the said conditions had not been received in Japan a telegram was dispatched by the British Ambassador to the Governor of the Straits Settlements asking that the necessary details be telegraphed.

The British Embassy states that a reply has now been received in the following terms:

"Glycerine conditions are now imposed on all exports of coconut oil from Straits Settlements to Japan but not at present on exports of copra. The glycerine equivalent is taken as ten per cent of the coconut oil and the conditions require that a confirmed London Banker's credit to the extent of 3s. per lb. of the glycerine equivalent of the coconut oil to be exported be opened in favor of Ministry of Munitions, London.

"If proof of shipment of the said glycerine equivalent to the United Kingdom is not produced to the Ministry of Munitions within ninety days of delivery of coconut oil at destination such credit to be forfeited. The glycerine is to be sold to the Ministry of Munitions at standard British prices. The intention is that the bond to carry out the above procedure shall be executed by the shipper here (i.e., Singapore) and certificate of British Consular Representatives in Japan will be required as proof of glycerine shipment (to the United Kingdom)."

From the above it would appear, therefore, that licenses for the export of coconut oil to Japan will not be granted unless arrangements are made to ship the glycerine equivalent of the said oil to the United Kingdom.

Shantung Salt.—The Oriental Salt Company, a joint Chinese and Japanese enterprise, was established on March 31. The company has the right of using land of 3,500 cho square in Yintao in the Kiaochow Bay as a salt field.

Borneo Rubber.—498,076 lbs. of plantation rubber were exported from the British North Borneo in January.

Silk in the Philippines.—Frequent successful experiments have been made by the government of the Philippine Islands in the matter of silk production in the islands. Experts in silk culture believe that it might be built up to commercial importance if capitalists were disposed to undertake it. Heretofore no serious attempt has been made on the part of private enterprise to develop the industry, but recently a corporation has been formed for embarking in silk culture. Already it has made a promising start in a small way. The Dugon-Dugon Plantation Co., at Tanap, Province of Ilocos Norte, has 15,000 mulberry trees of proper age for feeding silkworms. The start was made a short time ago with 20,000 worms, and arrangements were completed with the Bureau of Science of the Philippine Islands to obtain 30,000 eggs per month. Mulberry trees are being planted on a 1,000-acre tract which is adapted to such an enterprise. The plantation is in the charge of a Japanese silk-grower of experience. The company already has produced some silk. The output per month has been from fifteen to twenty kilos (33 to 44 pounds), which has sold for P.40 (\$20) per kilo (2.2 pounds) raw. This yield is obtained by one Philippine girl with one machine, the services of the girl costing \$6 per month.

Silk on Yangtze.—Quite recently some Japanese have bought about twenty mow of land at a place called Potsihfang, some twenty-five or thirty li north of Wusih, and are actively engaged in raising silkworms. It seems not to bother them at all that they have no right to own land in the interior, and the Chinese in the city who are annoyed by their presence, seem unable to evolve any plan for getting rid of them. The Chamber of Commerce is reported as having had the matter under consideration, without arriving at any conclusion.